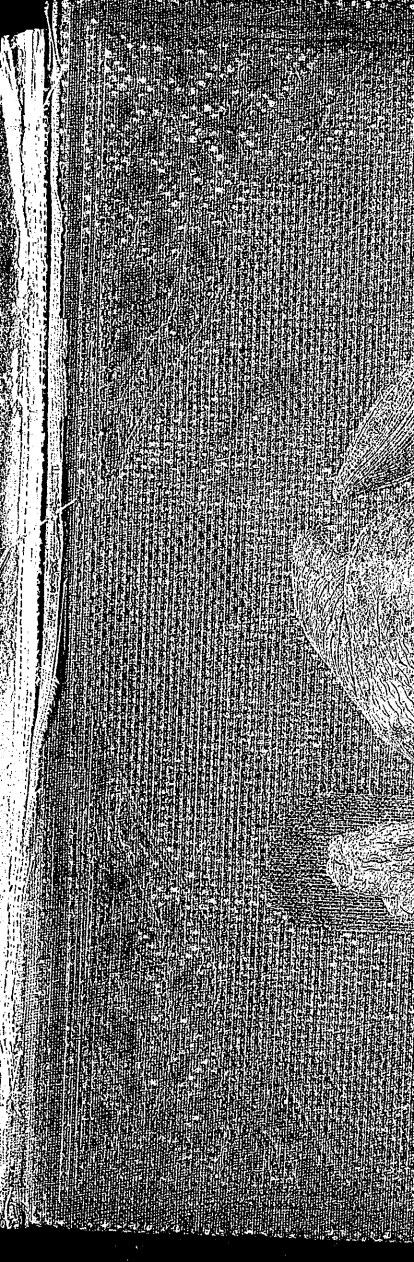
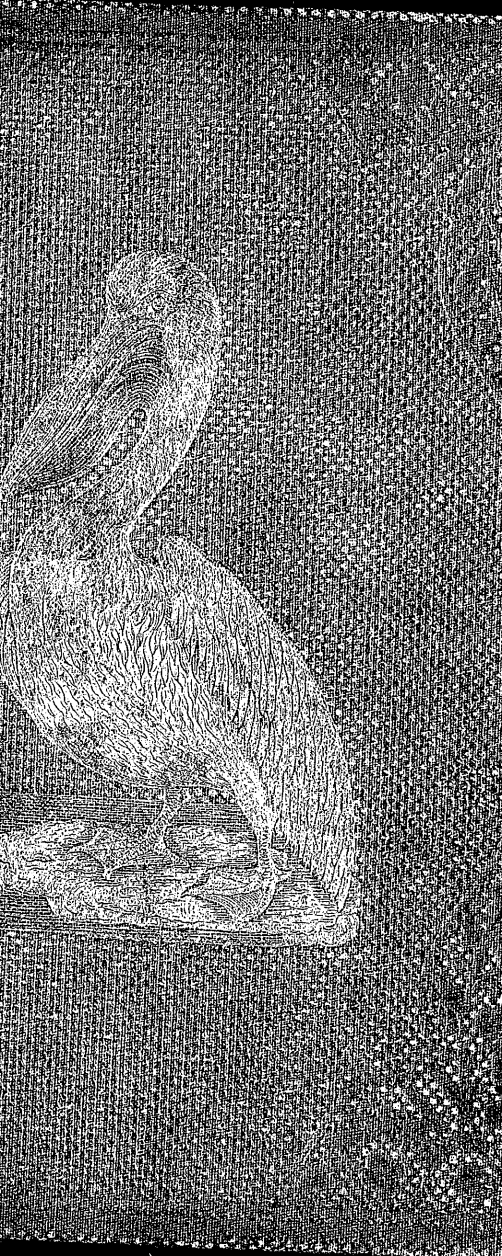






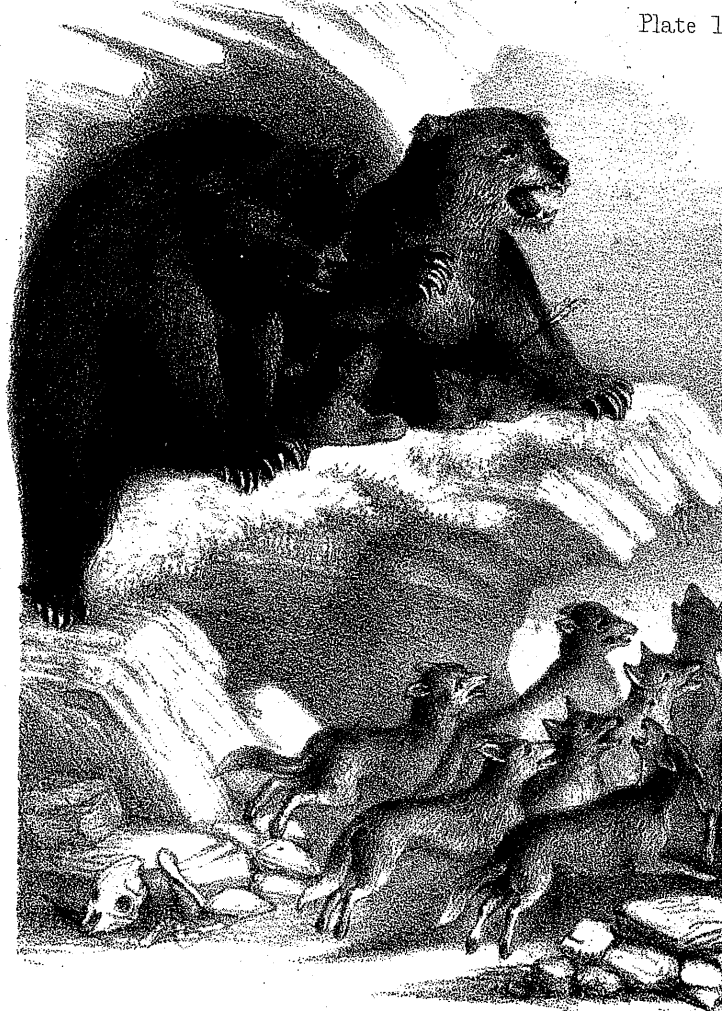
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POPULAR
SCRIPTURE ZOOLOGY,

CONTAINING

A FAMILIAR HISTORY OF THE ANIMALS
MENTIONED IN THE BIBLE.

BY

MARIA E. CATLOW,

AUTHOR OF 'POPULAR BRITISH ENTOMOLOGY.'

LONDON:

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BY

THE AUTHOR.

Beaconsfield.



PREFACE.

THE little work now offered to the attention of the young Biblical student, has been undertaken in the hope of rendering some assistance in the elucidation of one, and not the least interesting, branch of the Natural History of the Scriptures. Leaving difficult points of doctrine to the theologian; critical research into antiquities, manners, customs, and history, to the antiquary and historian; there is still abundant interest and instruction to be found in the too-often neglected field of Natural History, opened to our view in the pages of the Bible;—the history of those animated beings, which were created by the same Almighty hand as ourselves, and are the objects of the same Almighty care; with inferior powers indeed to those of man,

but equalling, and even surpassing him, in some of his most boasted endowments: in quickness of sight, as in the eagle; in swiftness, as in the antelope; and in keenness of scent and hearing. In constructive power, too, what architect, after a life of toil and study, can surpass the bee and the ant, in the perfect adaptation of their edifices to the wants and the comfort of their inhabitants, or the beauty and regularity of their structures? Surely, then, if our Heavenly Father has not disdained to bestow on the inferior animals, faculties so worthy of our admiration, we ought not to neglect or despise the study of so large a part of His creation. That the observation of the works of Nature was not neglected by the prophets, poets, and historians, whose writings form the Scriptures, almost every page of those interesting and valuable records amply testifies; the allusions are numberless, and, for the most part, not only eminently beautiful and poetical, but correct and graphic in the highest degree.

The book of Psalms and that of Job are replete with

imagery derived from animated nature; and the writers of the New Testament draw abundantly from the same source. This familiarity with the wild inhabitants of the forest and the desert, as well as with the more domesticated tribes, may be easily accounted for, by the wandering life, and the simple, pastoral habits of the Eastern nations of antiquity, which would naturally bring them into frequent contact with animals, forming either objects of the chase, or the chief sources of their wealth and distinction. Nor do the Scriptures alone, testify to the knowledge of the ancients on this interesting subject; the painting and sculpture of Egypt, the emblematical and other remains from Nineveh and Babylon, show, not only that the outward forms of various animals were well known, but that the distinguishing characteristics bestowed on them by their Creator were highly and correctly appreciated. Amongst the various animals delineated in the Nimroud sculptures, are the Indian elephant, rhinoceros, lion, tiger, wild boar, Bactrian or two-humped camel, antelope, ibex or mountain goat,

fallow deer, horse, monkey, ape, eagle, ostrich, and many birds, crabs, turtles, and fish of various kinds; cattle of two species "being distinguished in the sculpture by horns curved towards the back of the head, and horns projecting in front;" also a "wild ox, once inhabiting the Assyrian plains, and long since extinct, as neither tradition nor history records its existence in this part of Asia. It is distinguished from the domestic ox by a number of *small marks* covering the body, and apparently intended to denote long and shaggy hair*." The oryx, supposed to be the wild ox of Deuteronomy xiv., is white, *spotted* with yellow and red. The sheep also appear to have been of two species: that with the broad tail, referred to in Leviticus ix., is still found in the country.

The emblematic figures in these most interesting and valuable remains are thus described by Layard, and illustrate in a remarkable manner several passages in the Scriptures, particularly in Ezekiel. The eagle or vulture-headed figures,

* Layard's 'Nineveh.'

which "probably typified, by their mythic form, the union of certain divine attributes, may perhaps be identified with the god Nisroch, in whose temple Sennacherib was slain by his sons, after his return from his unsuccessful expedition against Jerusalem; the word *Nisr* signifying in all Semitic languages an eagle." The form of this deity was conjectured to be an eagle, long before the discovery of the Assyrian sculptures. "The winged, human-headed lions were types, to embody the conception of the wisdom, power, and ubiquity of the Supreme Being: they could find no better type of intellect and knowledge than the head of the man; of strength, than the body of the lion; of ubiquity, than the wings of a bird. These winged human-headed lions were not idle creations, the offspring of mere fancy; their history was written upon them, they had awed and instructed races, three thousand years ago."

The human-headed and eagle-winged bull evidently bears some analogy to the Egyptian Sphinx, and is supposed, like the lion, to be typical of the union of physical

strength with intellectual power, the addition of the wings denoting swiftness or ubiquity. The sphynx is always represented in a sitting posture; the Nimroud bull, on the contrary, is figured standing. "A human figure with the wings and tail of a bird, enclosed in a circle, is the type of Ormuzd, the great God of the Zoroastrian system."

"The thrones or arm-chairs supported by animals and human figures, resemble those of the ancient Egyptians. They also remind us of the throne of Solomon, which had 'stays (or arms) on either side, on the place of the seat, and two lions stood beside the stays, and twelve lions stood there, on the one side and on the other, upon the six steps.'"

The prophet Ezekiel, who had beheld the Assyrian sculptures, when seeking to typify certain divine attributes, chose the forms that were not only familiar to himself, but to those whom he addressed. "He chose the four living creatures, with four faces, *four wings, and the hands of a man under their wings on four sides*, the faces being those of a man, a lion, an ox, and an eagle—the four creatures

continually introduced on the sculptured walls ; and by them was a wheel, the appearance of which ‘was as a wheel in the middle of a wheel’ (Ezekiel i.) May not this wheel have been the winged circle or globe, which, hovering above the heads of the kings, typifies the Supreme Deity of the Assyrians?”

Compare these descriptions with the following lines, in Mr. Salt’s account of the imagery on the walls of the Egyptian temples :—

“ And of such mystic fancies, in the range
Of those deep cavern’d sepulchres are found
The wildest images, unheard of, strange,
Striking, uncouth, odd, picturesque, profound,
That ever puzzled antiquarian’s brain ;
Prisoners of different nations, bound and slain,
Genii with heads of birds, hawks, ibis, drakes,
Of lions, foxes, cats, fish, frogs, and snakes,
Bulls, rams, and monkeys, hippopotami,
With knife in paw, suspended from the sky ;
Vast scarabæi, globes by hands upheld,
From chaos springing, ’mid an endless field
Of forms grotesque—the sphynx, the crocodile,
And other reptiles from the slime of Nile.”

And also with the passage in Ezekiel viii., describing the "chambers of imagery" at Jerusalem, in which the Jews had imitated their neighbours, the Egyptians and Babylonians:—"So I went in and saw, and behold every form of creeping things, and abominable beasts, and all the idols of the house of Israel, portrayed upon the wall."

"I have already," continues Mr. Layard, "described my feelings, when gazing for the first time on these majestic figures. Those of the reader would probably be the same, particularly if caused by the reflection that, before these wonderful forms, Ezekiel, Jonah, and others of the prophets stood, and Sennacherib bowed; and that even the patriarch Abraham may possibly have looked upon them." These brief extracts will suffice to show the interesting nature of the discoveries made; and for further information the student is referred to the valuable work from which they are gleaned, which will amply repay an attentive perusal.

Considering it, then, an established point, that the study

of the Natural History of the Sacred Writings tends to throw much light on the character of the people who are there brought under our notice; that such study, earnestly and lovingly engaged in, strengthens our belief in the existence of God, and in His goodness and wisdom, which adapted each animal, from man to the minutest insect, to fill the place they occupy, the author hopes this unpretending volume may, by calling the attention of the young readers of the Bible to this subject, add, in a slight degree, to the interest of their studies, assisting them in forming a more accurate knowledge of the animals there mentioned, and thus paving the way to the study of Nature, and, consequently, of Nature's God, in a more extended form. Notwithstanding the research bestowed on this subject by many able and learned men, there is still much uncertainty with regard to some of the species mentioned, and, doubtless, some errors, arising from the vagueness of the allusions, or the ignorance of translators; but these are of minor importance, and do not detract materially from the

interest of the study. The author has availed herself of the aid given by the notes of the 'Pictorial Bible,' which throw so great and valuable a light on the subjects which they illustrate, and has endeavoured to simplify the information given, so as to adapt it to the general reader, and interest not the naturalist alone, but those who have yet to learn that,

“ Wonderful, indeed, are all His works :
Pleasant to know, and worthiest to be all
Had in remembrance, always with delight.”

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POPULAR SCRIPTURE ZOOLOGY.

INTRODUCTION.

THOUGH the intention of this little volume is merely to give an account of such members of the animal kingdom as are mentioned in the Sacred Writings, together with interesting facts relative to their localities, the habits of the genera to which they belong, and the various uses to which they were applied, particularly by the Hebrews; it is considered that the work will be rendered far more useful to the student, as well as more interesting to the general reader, by being arranged in a somewhat scientific manner; by having a concise generic description of the various animals, and by the introduction (more particularly where the species is doubtful) of two or more species, in order to supply a

greater amount of instruction relative to the habits and peculiarities of the genus.

Our knowledge of Biblical Zoology is, and must remain in a great degree, uncertain and imperfect; the references being in most cases so vague, as to render it impossible to define the species alluded to, and sometimes even the genus is involved in the same degree of obscurity. Very little light is thrown on the subject by modern travellers in the Holy Land, as the wilder animals, it is said, have mostly disappeared from Palestine. Hasselquist, a pupil of Linnæus, who visited the Holy Land in 1750, mentions, as the only animals he saw, the porcupine, the jackal, the fox, the rock goat, and the fallow deer. Captain Mangles describes an animal of the goat species, "as large as an ass, with long, knotty, upright horns; some specimens bearded, and their colour resembling that of the gazelle." The former writer also enumerates the following birds as coming under his own observation:—"Two species of vulture, one seen near Jerusalem, the other near Cana of Galilee; the falcon near Nazareth; the jackdaw in great numbers in the oak woods of Galilee; the bee-catcher in the groves and plains between Acra and Nazareth; the nightingale among the willows of the Jordan and the olive-trees of Judea; the

field lark everywhere; the goldfinch in the gardens near Nazareth; the red partridge and other species; the quail, the turtle-dove, and ring-dove; wild geese, ducks, widgeons, snipes, and water-fowl of every description abound in some situations. The Holy Land is at present infested with lizards, different kinds of serpents, vipers, scorpions, and various insects; flies of many species are extremely annoying; and ants are so numerous in some parts, that one traveller describes the road to Jaffa, from El Arisch, as, for three days' journey, one continued ant-hill."*

It would be, however, as unnecessary to look for, as impossible to find, even one-half of the animals named in the Scriptures, in Palestine, or its immediate vicinity. Very many were brought into the country either for domestic use, or, in the case of Solomon, as objects of enlightened curiosity, ornament, and luxury; others are expressly described as the productions of foreign lands; and many would be familiar to the Jews from their residence in Egypt and their captivity in Babylon, thereby furnishing that poetical people with the variety of similes with which their figurative language so abounds, and accounting for the numerous animals mentioned. Thus, speaking of the desolation of

*. Modern Traveller—Palestine.

Babylon, the prophet says, it has become "a possession for the bittern and the wild ass of the desert;" and Job, speaking of the wicked man, compares his house to that of the *moth*, and his meat to the *gall of asps*. The lion affords abundance of metaphors; and no one can read without admiration the magnificent description of the war-horse in the book of Job, or that of the *leviathan*, the latter of which, is an example of the difficulty that exists in identifying many of the animals alluded to. All the writings of the Old Testament abound in allusions to animal life, showing a knowledge of the habits and peculiarities of the creatures named, such as is only acquired by accurate and close observation. Solomon is said to have spoken "of beasts, of creeping things, and of fishes." His Proverbs are replete with proofs of the wise king's knowledge of, and delight in, the inferior animals, and he constantly presents them as examples of good, or as types of bad qualities; for warning and for reproof. "Look not upon the wine when it is red:" "it biteth like a serpent and stingeth like an adder." "Riches make to themselves wings; they fly away as an eagle towards heaven." "Let a bear robbed of her whelps meet a man, rather than a fool in his folly." "Go to the ant, thou sluggard; consider her ways and be wise."

David, in the Psalms, is almost equally profuse in his allusions:—"I am like a pelican in the wilderness; I am like an owl in the desert." "Yea, the sparrow hath found an house, and the swallow a nest for herself, where she may lay her young, even thine altars, O Lord of Hosts, my King and my God."

Quotations might be multiplied from the book of Job, from the Prophets, and, indeed, from every part of the Old Testament, evincing the deep interest taken from the earliest times in the living works of the Great Creator; and surely the research into, and contemplation of, the beautiful, wonderful, and ever-interesting pages of the book of Nature, which has been so profusely and benevolently spread before us, is an acceptable offering of our intellect to the Giver of all things, and a pursuit tending more than any other, to direct our minds and hearts to "Him in whom we live, and move, and have our being."

The New Testament is by no means deficient in similar indications, and our Saviour himself, in his discourses, makes many, and frequently touching allusions to natural objects, both animate and inanimate. "The foxes have holes, and the birds of the air have nests, but the Son of Man hath not where to lay his head." "I am the good

shepherd : the good shepherd giveth his life for the sheep ; but he that is an hireling, and not the shepherd, whose own the sheep are not, seeth the wolf coming, and leaveth the sheep and fleeth ; and the wolf catcheth them, and scattereth the sheep." Many more examples might be brought, but these will amply suffice to show the frequency of the allusions to, and the use made of, the animal kingdom by the sacred writers, in the glowing imagery of their magnificent poems, in their promises, and in their threatenings.

Nor are the poets of profane antiquity behindhand in their use of animated nature, for description and for metaphor,— frequently, as will be seen in the following pages, assisting greatly to throw a light on the obscurity of those passages which have tasked the profoundest research.

Homer is particularly happy in illustrating his descriptive passages by the aid of the habits of animals. Thus, he compares a warrior, reluctantly leaving the field of battle, to the king of beasts :—

" So turns the lion from the nightly fold,
Though high in courage, and with hunger bold ;
Long gall'd by huntsmen, and long vex'd by hounds,
Stiff with fatigue, and fretted sore with wounds ;
The darts fly round him from a hundred hands,
And the red terrors of the blazing brands ;

Till late, reluctant, at the dawn of day,
Sour he departs, and quits th' untasted prey."

Here is almost the natural history of the animal in a few lines. His nightly prowling, his courage undaunted by hounds and huntsmen, only giving way under the attack of fire, and, lastly, his retreat at the dawn of day, are all admirably true to nature, and agree perfectly with the scattered notices in Scripture. Again, he compares a proud chief to an eagle:—

"As the bold bird, endued with sharpest eye
Of all that wing the mid aerial sky,
The sacred eagle, from his walks above,
Looks down, and sees the distant thicket move;
Then stoops, and sousing on the quivering hare,
Snatches his life amid the clouds of air."

And again:—

"So the strong eagle, from his airy height,
Who marks the swans' or cranes' embodied flight,
Stoops down impetuous while they light for food,
And, stooping, darkens with his wings the flood."

We may observe here that Homer calls the bird the *sacred* eagle, elsewhere the bird of Jove; and it is interesting to find that in Ezekiel this bird is used as a symbol of sovereignty, the king of Egypt being described as a "great eagle with great wings and many feathers," and the monarch

of Babylon, under the image of "a great eagle with great wings, long-winged, full of feathers, which had divers colours." Job's description is almost identical with that of the Greek poet: "Doth the eagle mount up at thy command, and make her nest on high? She dwelleth and abideth on the rock, upon the crag of the rock, and the strong place. From thence she seeketh her prey, and her eyes behold afar off."

Homer's description of the dove is a beautiful illustration of the gentle bird so often used as a type in the Scriptures.

"The mast, which late a first-rate galley bore,
The hero fixes in the sandy shore;
To the tall top a milk-white dove they tie,
The trembling mark at which their arrows fly.

* * * * *

The dove, in airy circles as she wheels,
Amid the clouds, the piercing arrow feels;
Quite thro' and thro' the point its passage found,
And at his feet fell bloody to the ground.
The wounded bird, ere yet she breathed her last,
With flagging wings alighted on the mast;
A moment hung, and spread her pinions there,
Then sudden dropped, and left her life in air."

Poets of all ages have celebrated the flight of the dove as peculiarly graceful. Virgil says:—

“ Her pinions poised, through liquid air she springs,
And smoothly glides, nor moves her levelled wings.”

The Psalmist's beautiful aspiration will occur to every mind: “ Oh, that I had wings like a dove! for then would I fly away, and be at rest.”

Sculpture and painting also lend their aid, not only in marking the estimation in which animals were held by the ancients, but also throwing a light on many of the more obscure allusions of the Scripture writers. From the ancient sculptures of Egypt we learn much of the manners of these people, who were too closely connected with the Hebrews, not to have imbued them with their customs. And accordingly, these records form interesting commentaries on many expressions used in the Bible: for instance, the chase was a favourite pastime among the Egyptians, and from the monuments found in Upper Egypt it seems that the animals of the desert were taken for the menagerie as well as for food; for the traps are made with the greatest care, to prevent the prey from being injured. The animals are also represented as being led alive, quite as often as carried after being slain, and the sportsmen use blunt arrows, to stun, rather than kill; the hounds, too, are taught to hold their prey without injury: in the preserves

may be recognized the wild goat, oryx, gazelle, hare, and porcupine. It is evident that the Jewish monarchs had adopted the custom of keeping beasts of chase, as well as cattle, in enclosures; for we read that the daily provisions for Solomon's household were "ten fat oxen, and twenty oxen out of the pasture, and an hundred sheep, besides harts, and roebucks, and fallow deer, and fatted fowl." The antelope is frequently figured, and these graceful creatures appear to have been great favourites with the Egyptian ladies; the Egyptian princess, in Solomon's Song, is accordingly represented making use of the following expression:—"I charge you, O ye daughters of Jerusalem, by the roes and by the hinds of the field, that ye stir not up, nor awake my love, till he please." Fowling was evidently a favourite sport with the people of Egypt, as may be gathered from numerous paintings: the birds were caught with different kinds of nets; and how many allusions there are to this practice in the Scriptures.—"For man also knoweth not his time: as the fishes that are taken in an evil net, and as the birds that are caught in the snare, so are the sons of men, snared in an evil time, when it falleth suddenly upon them." And again: "As a bird hasteth to the snare, and knoweth not that it is for his life." The

prophet Hosea also refers to the timidity of the Egyptian birds, caused by the prevalence of this amusement: "They shall tremble as a bird out of Egypt, and a dove out of Assyria." The only domestic birds found on the Egyptian monuments are geese; the ostrich is frequently figured; large herds of cattle are also very common, and the ox was evidently used, as in Palestine, both for food and for agricultural purposes.

The ruins of most ancient cities furnish their quota of illustration to our subject, either presenting us with the sculptured forms of the animals mentioned in Holy Writ, or some representation of the uses to which they were applied, agreeing with and explaining the allusions; and these are continually multiplying as fresh discoveries are made. Nineveh and Babylon, Luxor, Thebes, and the more modern Herculaneum, have all contributed to our knowledge, and thrown new lights on the difficulties which beset the earnest inquirer into the truths of Scripture.

The Natural History of the Bible may and will be considered by many as of minor importance; but is it really so, when every animated being, from the highest to the most insignificant, ought to be looked upon as a manifestation of Divine Power, and a medium of that happiness which the

Creator has designed for all His creatures? Do we honour a painter, when despising, or looking with perfect indifference on, his works? Do we show our admiration of a poet or a musician, by turning with apathy from the noble thoughts of the one, and the sublime strains of the other? Do we consider it sufficient to pay them a few unmeaning compliments? Assuredly not; we study their works, and learn still more to admire the painter, the poet, and the musician. Study, then, the works of God, from the firmament which showeth His handiwork, to the drop of water teeming with the life He has bestowed, nor consider those creatures unworthy of regard, which are honoured by the notice of the wisest men of ancient times;—by David, the sweet Psalmist of Israel; by Solomon, the wise king of the Hebrews; by prophets, and by moralists, and, above all, by the great teacher Jesus Christ, who illustrated His sublime and beautiful Sermon on the Mount with allusions both to animals and plants. “Give not that which is holy unto the dogs, neither cast ye your pearls before swine.” “Behold the fowls of the air; for they sow not, neither do they reap, nor gather into barns; yet your heavenly Father feedeth them.” “Consider the lilies of the field, how they grow; they toil not, neither do they spin; and yet I say

unto you, that even Solomon in all his glory was not arrayed like one of these." The adoption, by our Saviour, of the lamb as a type of Himself, and that of the dove for the Spirit of God, are too well known to need comment; but that of the "Hind of the Morning," which is the title of the pathetic and beautiful 22nd Psalm, so generally supposed to be typical of Christ's sufferings, is not so commonly known, but is not improbably applied to him, as the Arabian poets frequently gave to the *sun* the name of the gazelle; and the "Sun of Righteousness" is a well-known designation of Christ. Cowper probably had this in view when writing those beautiful lines:—

"I was a stricken deer that left the herd
Long since. With many an arrow, deep infix'd,
My panting side was charged, when I withdrew,
To seek a tranquil death in distant shades.
There I was found by one who had himself
Been hurt by the archers. In his side he bore,
And in his hands and feet, the cruel scar."

The animals noticed in the following pages are arranged systematically, according to the modern classification, in order to facilitate reference, and to give the reader a general idea of the animal kingdom, from the highest class, *Mammalia*, down to the *Radiata*, which make so near an

approach in their habits and formation to the vegetable kingdom. These kingdoms were formerly considered so completely separated from each other, as to preclude the possibility of their being confounded together; but later discoveries have proved that these apparently impassable barriers were not raised by the hand of Nature, and that there are connecting links so fine and delicate, as to render very difficult the question of where each begins and ends. Mr. Rymer Jones thus beautifully expresses this uncertainty with regard to the animal and vegetable kingdoms:—“Light and darkness are distinct from each other, and no one possessed of eyesight would be in danger of confounding night with day; yet he who, looking upon the evening sky, would attempt to point out precisely the line of separation between the failing day and the approaching night, would have a difficult task to perform. Thus it is with the physiologist, who endeavours to draw the boundary between these two great kingdoms of Nature; for so gradually and imperceptibly do their confines blend, that it is at present utterly out of his power to define exactly where vegetable existence ceases and animal life begins.”

In Maunder's ‘Treasury of Natural History’ (a most valuable assistant to the student) the animal kingdom is thus

described:—"The possession of a nervous system being supposed to be indispensable to the power of motion, it has been considered the distinguishing characteristic of the animal kingdom; but in one division (*Acrita*, comprehending Polypes, Infusoria, Animalcules, Sponges, &c.) no traces of nerves have hitherto been discovered. The best characteristic of the animal kingdom is the possession of a mouth or aperture, through which food is received, and a stomach by which it is digested; and this would include all the organized beings which have ever been considered by naturalists to belong to the animal kingdom, except the various kinds of sponges."

No *species* of the large and useful class Fishes (*Pisces*) is mentioned in Scripture, though the references to fish and fishing are by no means uncommon. In Exodus vii. it is related, in speaking of the Nile, that "the fish that was in the river died;" and there is great interest in this statement, when it is known that fish formed a considerable part of the subsistence of the Egyptians. They ate them either fresh, salted, or dried in the sun. Diodorus says fish was a great article of export, and that from the time of King Mœris many persons found occupation in salting the fish caught in the lake made by that prince, and called by his

name. In the complaints made by the Israelites against Moses in the desert, they particularly regret the fish of the land of bondage: "We remember the fish that we did eat in Egypt freely." Isaiah also, when denouncing divine vengeance upon the Egyptians, dwells strongly on the ruin of those who subsisted on the fish and other productions of the Nile:—"And the waters shall fail from the sea, and the rivers shall be wasted and dried up. And they shall turn the rivers far away; and the brooks of defence shall be emptied and dried up; the reeds and flags shall wither. The paper-reeds by the brooks, by the mouth of the brooks, and everything sown by the brooks, shall wither, be driven away, and be no more. The fishers also shall mourn, and all they that cast angle into the brooks shall lament, and they that spread nets upon the waters shall languish. Moreover, they that work in fine flax, and they that weave net-works, shall be confounded. And they shall be broken in the purposes thereof, all that make sluices and ponds for fish." Diodorus says, that twenty-two kinds of fish were found in Lake Moeris.

From the representations of this subject on Egyptian monuments, we gather, that the fishermen were of an inferior class to the agricultural population, and this is con-

firmed by history. This was also the case in Palestine, and hence the surprise evinced, when Christ selected two of his apostles from this despised race. "Now as he walked by the sea of Galilee, he saw Simon, and Andrew his brother, casting a net into the sea, for they were fishers. And Jesus said unto them, Come ye after me, and I will make you to become fishers of men; and straightway they forsook all and followed him." The sea of Galilee still abounds in excellent fish, though from the poverty of the country they are unmolested, but by the storks and diving birds which frequent its shores.

In Leviticus, the permission to eat of the inhabitants of the waters is limited to such as have both fins and scales: "These shall ye eat, of all that are in the waters; whatsoever hath fins and scales in the waters, in the seas, and in the rivers, them shall ye eat." The shark, the ray, and the sun-fish are examples of those fish destitute of scales, while the seal and the walrus, though living in the waters, have neither scales nor fins; these latter animals are also amphibious, which was another reason for their being regarded as unclean. The same prohibition was in force in Egypt, and the people of that country ate no fish brought from the sea, under an idea that all marine productions were impure:

for this reason, their fish was cured with fossil salt, found in the African desert. The priests refused all fish, according to Plutarch, thinking they might possibly have had some communication with the sea. Fishing with nets is illustrated profusely in Egyptian antiquities, and so constantly referred to in the Bible, that it must also have been the habit in Palestine. Our account will be appropriately closed by the description of this employment, given by the Evangelist St. John.

“After these things Jesus showed himself again to the disciples at the sea of Tiberias ; and on this wise showed he himself. There were together, Simon Peter, and Thomas called Didymus, and Nathanael of Cana in Galilee, and the sons of Zebedee, and two other of his disciples. Simon Peter saith unto them, I go a-fishing ; they say unto him, We also go with thee. They went forth and entered into a ship immediately ; and that night they caught nothing. But when the morning was now come, Jesus stood on the shore, and said unto them, Children, have ye any meat ? They answered him, No. And he said unto them, Cast the net on the right side of the ship, and ye shall find. They cast therefore, and now they were not able to draw it for the multitude of fishes.”

CLASS MAMMALIA.

ORDER QUADRUMANA.

SIMIADÆ.—Apes, Baboons, and Monkeys.

Apes chiefly inhabit the forests of Asia and Africa; they also abound in Malacca and the islands of the Indian Ocean, congregating on trees and feeding on fruit, leaves, and insects. They generally live in troops, sometimes constructing a kind of hut as a defence against the weather: their disposition is often fierce and intractable, though some species are, on the contrary, grave and gentle; their arms are so long as nearly to touch the ground when the animal stands upright; the fingers and toes are very flexible, being thus adapted for clinging to the branches of trees, and even when carrying their young they spring from tree to tree with wonderful facility. As no particular species is alluded to in the Scriptures, an example of each division will be

given; and the Orang Outan (*Pithecus satyrus*), being the most remarkable, will serve as a type of the first. It is a native of the forests in the interior of Borneo, Sumatra, &c., and lives chiefly on fruits, though occasionally eating eggs, insects, and reptiles. These animals approach the height of a man, and are covered with coarse, reddish hair, the lips are thin and projecting, the ears small, the nose very flat, and the face has a bluish tinge; their arms are so long that the tips of the fingers can touch the ground when the animal is erect. Dr. Abel, in the 'Asiatic Researches,' thus graphically describes the capture of one of these creatures:—"He was discovered by the company of a merchant ship, at a place called Ramboon: on the approach of the boat's crew he came down from a tree, and made for a clump at some distance, gaining by one spring a very lofty branch, and bounding from one to another with the swiftness of a common monkey. After receiving five balls, his exertions relaxed, and he reclined exhausted against a branch: the ammunition of the hunters being by this time exhausted, they were obliged to fell the tree in order to obtain him. But what was their surprise to see him, as the tree was falling, effect his retreat to another, with seemingly undiminished vigour! In fact they were forced to cut down all

the trees before they could oblige him to combat his enemies on the ground ; and when finally overpowered by numbers, and nearly in a dying state, he seized a spear, which would have withstood the strength of the stoutest man, and broke it like a reed. It was said by those who aided in his death, that the human-like expression of his countenance, and his piteous manner of placing his hands over his wounds, distressed their feelings so much, as to make them question the nature of the act they were committing."

Baboons comprise a large and fierce tribe, very common in parts both of Asia and Africa. They are less like man in conformation, and far more disgusting in habits and cruel in disposition, than the other tribes ; it is said that they can never be completely tamed, and as they advance in years they increase in fierceness and brutality. In their native haunts they live on berries, roots, eggs, and insects, but often do much mischief in the more cultivated districts, by depredations on the fruit and grain of gardens and fields, congregating in troops for these predatory excursions. It is said that "a troop of them will sometimes form a long chain, extending from the vicinity of their ordinary habitation, to that of the garden or field they are engaged in plundering, and that the produce of their theft is pitched

from hand to hand till it reaches its destination in the mountains." There are many genera and species.

The *Derrias* (*Cynocephalus hamadryas*) inhabits the mountains of Arabia and Abyssinia. Maunder says, that "this was probably the species known to the ancients, and figured on Egyptian monuments:" and from the localities in which it is found, it may claim to be the *ape* mentioned in Scripture, if, indeed, the species can be named with any degree of certainty. It is about four feet high, the face extremely long, of a dirty flesh-colour, having a light ring round the eyes: the hair of the head and neck forms a long mane falling on the shoulders: the general colour is a mixture of light grey with cinereous (white with a shade of brown): a dark brown line extends down the back, the hands are almost jet-black, and the feet rusty-brown. The *Derrias* is gentle and playful when young, but afterwards becomes sullen and malicious.

The next tribe (*Monkeys*) are generally distinguished by having long tails, and cheek-pouches for the temporary reception of food. They are the smallest of the Old-world *Quadrumanæ*, and inhabit India, Malacca, &c., and Africa. The latter may, indeed, be considered as their head quarters. They are generally gregarious, associating in large troops

always composed of one species; their great enemies are serpents, as they can escape other animals by their superior agility. Monkeys subsist principally on fruit and succulent roots; they are very fond of sweets, but when this food fails they eat insects and worms, and even descend to the sea-shore to feast on oysters and crabs: they are said to watch the former until they open their shells, when they put in a stone to prevent their closing, and then eat the fish at their leisure; to entice the crabs from the holes in which they are concealed, they put in their thin tails, and when the crab fastens on it, the artful monkey suddenly withdraws the bait, and thus drags its prey to shore. As parents they are extremely affectionate; both the male and female being indefatigable in fondling and caressing their offspring.

A few species must suffice as examples, for they are very numerous, and they will be selected from those which inhabit localities probably visited by Solomon's fleet.

The Diana Monkey (*Cercopithecus Diana*). This species is a native of Congo and Guinea. It has a long white beard; the body is of a reddish colour, shading into white underneath, with a white crescent on the brow: the tail is very long. It has a playful and lively disposition.

The Green Monkey (*Cercopithecus Sabæus*) is of a fine

olive-green colour, variegated with grey; the cheeks are covered with long, pale yellow hair. It is a native of several parts of Africa.

The Moustache Monkey (*Cercopithecus cephus*) is a native of Western Africa. It has two tufts of yellow hair on the cheeks, whence its name is derived; the face is bare, and of a bluish-black colour; the hair on the head yellow, varied with black, that on the body and limbs red and ash-colour, the under part being rather paler.

Having thus given a slight sketch of this tribe of animals, including only those species which, from the countries they inhabit, were probably known to the Hebrews, we will endeavour to collect and simplify the opinions of various authors, with regard to those members of the family which are named in the Sacred Writings.

In the 1st book of Kings, x. 22, is the following passage:—"For the king had at sea a navy of Tharshish, with the navy of Hiram; once in three years came the navy of Tharshish, bringing gold and silver, ivory, and *apes*, and peacocks." Apes are again mentioned, in nearly similar words, in 2 Chron. ix. 21. Now it will be evident to the reader, that from this vague notice no certainty can be arrived at with regard to species, the original word *koph* being quite

as indefinite as the translation; it is also an unsettled and disputed point, what was the exact locality from which the animal in question was brought.

The situation both of Tarshish, and Ophir so often mentioned in connection with it, is greatly disputed by the learned. The latter has been variously placed on the western coast of Arabia, the eastern coast of Africa, the Persian Gulf, and the coast and islands of Asia; but the general conclusion seems to be in favour of Sofala, partly from a similarity in name, and also that all the articles mentioned could be procured on the coast, or in the interior. Purchas says that "ivory, apes, gems, and precious woods (which grow in the wild places of Tebe, within Sofala), and much fine black wood (ebony) grows on that coast, and is thence carried to India. As for peacocks, I saw none there, but there must needs be some, for I have seen the Cafers wear their plumes on their heads. As there is a store of fine gold, so also is there of fine silver, in Chiconia, where are rich mines." It seems much in favour of this idea that the coast of Africa below the Gulf was the nearest country where the fleet of Solomon could procure, as native produce, the commodities with which it was freighted; accordingly this opinion has many supporters; but there are yet two alterna-

tives, the Persian Gulf, in some of whose islands Ophir has been placed, and India, which has a large majority of advocates, as affording all the commodities sought for, and, by its greater distance, accounting for the three years said to have been spent on the voyage. Ceylon has the greatest number of votes amongst those who think it necessary to fix on one particular spot in the Indian territories.

The dispute with regard to Tarshish is equally intricate, most writers considering Tartessus in Spain (a most important settlement of the Phoenicians, at the mouth of the Guadalquivir, and not far from Cadiz) to be the place indicated. Its situation in the west is inferred from Genesis x. 4, where the name is mentioned with Elishab, Chittim, and Dodaim, as being one of the descendants of Japheth, to whom were given the countries of the west. In Psalm lxxii. 10, it is connected with "*the islands*," which expression, amongst the Jews, signified any country beyond the Mediterranean. Passages in Ezekiel show it to have been a place of great trade; and in Isaiah it is mentioned as an important Phœnician colony. But supposing this to be really the situation of Tarshish, it involves another difficulty, in connection with that of Ophir, as it necessitates a voyage round the Cape of Good Hope to include both places in one

expedition, and this voyage, though not considered impossible, involves many and serious difficulties. Herodotus describes such a voyage as having been for the first time undertaken by the Phœnicians, under the orders of Pharaoh Necho, king of Egypt, four hundred years after the time of Solomon, and these people would surely have known from their public records (in which circumstances of much less importance are noted) that the voyage had been frequently made by their ancestors.

The matter being involved in so much uncertainty, we shall give the reader the advantage of the deductions made by the authors of the notes to the 'Pictorial Bible,' in which a full and interesting account of the various opinions on this intricate point may be found.

"The reader will by this time begin, perhaps, to question whether any particular places are denoted by the words Tarshish and Ophir. We have already explained that 'ships of Tarshish' were probably so called from being like those which went from Phœnicia to the Atlantic, especially adapted to a long voyage. Now, by an obvious transition of ideas among a people whose notions of distant places were very indefinite, when ships that made long voyages were called ships of Tarshish, the name may, in process of

time, have been transferred, so as to denote any distant place to which such ships went. This would adequately explain how it happens that the ships which went to Ophir are called ships of Tarshish in the book of Kings, but in the later book of Chronicles are not so called, but are said to have gone *to* Tarshish, that is, went a distant voyage. Heeren applies a somewhat similar explanation to Ophir. He says, 'It is very probable that this name, like those of Thule and others, did not designate any fixed place, but simply stood as a general name for the rich south country, including the shores of Arabia, Africa, and India.' In confirmation of this, he observes that the word Ophir signifies in Arabia 'the rich countries.' In these explanations, as respecting the names of Tarshish and Ophir, we entirely acquiesce. They enable us to conclude that the fleet may have gone trading to various places, collecting the different commodities which were required, and relieve us from the necessity of finding everything in one place."

The mention of various animals being brought to Solomon is very interesting when we consider it in connection with his known attachment to the study of natural history: "He spake of trees, from the cedar-tree that is in Lebanon, unto the hyssop that springeth out of the wall; he spake

also of beasts, and of creeping things, and of fishes." We can understand that he commissioned his navigators to bring home living specimens of the more remarkable foreign animals, that he might be enabled to acquaint himself with their peculiar habits and characteristics by actual study and observation. Thus we find that although trade was the primary object of his navigation, the wise Hebrew king was not insensible to the advantages which it offered him, in acquiring a larger knowledge of God's creation; and, as every one would be anxious to gratify the king in his favourite pursuit, we may readily imagine that he must have formed a noble collection of animals, many of which probably had never before been seen in western Asia. The writings in which his observations are recorded would have been of great interest at the present day, but now the only evidence we possess of his peculiar taste for such studies, beyond the bare historical statement of the fact, is in the circumstance that his existing writings contain more numerous and striking allusions to the characteristics of animals and plants than are to be found in any other sacred writer.

ORDER CHEIROPTERA.

VESPERTILIONIDÆ.—Bats.

These animals are characterized by having the faculty of sustained flight, owing to their anterior limbs being formed like wings, the fingers being extremely long and connected by a membrane, which in most species extends between the hind legs, and embraces the tail, where this member is not wanting. They all possess four large canine teeth; the other teeth vary considerably. *Cheiroptera* are divided into two families. *Istiophori* are distinguished by the peculiar construction of the nose, the skin being expanded into leaf-like appendages. The second family, *Anistiophori*, have the nose simple. These are again divided into sub-families, those of the first division being distinguished by the more or less complicated structure of the nose, those of the latter by the form of the wings.

There are about twenty species of these interesting little animals in England; and Mr. Bell rightly observes that "it is, perhaps, difficult to account for the prejudices which have always existed against them: that the ancient Greek and Roman poets, furnished with exaggerated accounts of the animals infesting the remote regions with

which their commerce or their conquests made them acquainted, should have caught eagerly at these marvellous stories and descriptions, and rendered them subservient to their fabulous but highly imaginative mythology, is not wonderful; and it is probable that some of the Indian bats, with the strange combination of the character of beast and bird, which they were believed to possess, gave to Virgil the idea, which he has so poetically worked out, of the harpies which fell on the tables of his hero and his companions, and polluted, whilst they devoured, the feast from which they had driven the affrighted guests." But that the harmless little bats of our own climate, whose habits are so innocent and amusing, should be connected in the mind with anything mysterious or alarming, is rather incomprehensible.

The original word used in Isaiah, ch. ii. ver. 20, is *ateli-phim*, which is supposed to mean "fliers in darkness," a very suitable name for bats, which only quit their retreats when night comes on. They are mentioned also in the books of Leviticus and Deuteronomy; and in the latter are very correctly connected with "every creeping thing that flieth." Nothing can now be ascertained relative to the species alluded to, and, indeed, in all probability, no defi-

nite species was intended, the allusion being simply to bats in general. There are no very large or remarkable kinds in Palestine, the most common species being little larger than those found in England. When examined, it is seen to be a very delicate and beautiful creature, covered with fine fur of a pale yellow colour, while the wings are, when expanded, ribbed with bright red lines. Bats were forbidden as food by the Mosaic law, but they are considered delicate eating in some parts of Southern Asia, where they are of a large size.

The bats of the Holy Land, as usual, live in caves and deserted buildings, but they also swarm in the towns. Many of the windows are only latticed, for greater coolness; consequently they harbour in the rooms, clinging in considerable numbers to the high ceilings: the lightness of their colour, the loftiness of the apartments, and the perfect state of repose maintained by them during the day, preventing them from being very conspicuous; but in the evening, if unable to quit their asylum, they occasion much trouble and annoyance by flying about the room. They, however, prefer underground cellars, and there they may be found by hundreds.

Bats feed chiefly on insects, such as gnats, moths, and

beetles, the wide mouth and formidable teeth with which they are provided being an excellent trap for their capture. Thus they are of great service to vegetation even in our temperate climate; and in those tropical regions where insects exist in myriads, many localities would not be habitable without this useful family. In this country they disappear in autumn, and, clustering together in the closest crannies they can find, remain dormant, until the warm suns of spring induce them to venture from their retreat. The female has generally two young ones at a time, which are naked and helpless at their birth, and constantly cling to their mother until capable of flight. The ears of bats are generally very large, so that the sense of hearing is probably acute. The eyes, on the contrary, are remarkably small, and being deeply seated like those of the mole, they do not seem to be essentially necessary to the animal in finding its way. The experiments made by Spallanzani proved that, when blinded, they could find their way between obstacles of which they had no previous knowledge. He suspended willow rods in the room into which he turned the blind bats, and though he moved these, so as to make the passages as varied as possible, the animals never struck one of them, though they flew in all directions. It is

supposed that they feel a different resistance in the air in time to avoid the obstacle, but by what sensation, or by what means, it is very difficult to determine: the existence of such a faculty in this and many other nocturnal animals is, however, a proof of the wisdom and goodness of the Creator.

Bats are very numerous on the banks of the Nile, where insects abound: in India also, they swarm in the stupendous caves, which have been hewn with so much care and labour into temples, now almost deserted, and abandoned to bats and reptiles; in New Holland they are also very numerous, and in the South Sea Islands species of a large size are found in profusion. The vampire, of which so many exaggerated accounts have been published, is found in South America. It is accused, not only of sucking the blood of single individuals, or animals, but of destroying whole herds of cattle, when these were first introduced by the missionaries. Many of the stories related are no doubt based on truth, though going much beyond it in details, for notwithstanding that bats are, on the whole, far more useful than hurtful to man, they have, from their peculiar appearance, dismal habitations, and the time of their flight, been creatures to which poets have frequently had recourse, to

excite feelings of dread and loathing. As the peacock was sacred to Juno, queen of heaven, so the bat was dedicated to Proserpine, the empress of hell.*

ORDER INSECTIVORA.

TALPA.—The Mole.

These animals are admirably qualified for the subterraneous life they are destined to lead. They are five or six inches in length, the body thick, the head much prolonged, the nose projecting greatly, and formed for conveying food to the mouth; they have no external ears, though the sense of hearing is very acute; and the small eyes are so nearly concealed by the fur, as to have given rise to the belief that they were entirely wanting; the legs are very short and the fore feet strong, broad, and furnished with large stout claws, thus enabling the animal to work through the ground with great rapidity. The food of moles consists chiefly of worms and the larvæ of insects, but in summer they appear on the surface in search of other prey, such as birds, mice, frogs, and snails; in these nocturnal excursions, they are often, in

* British Cyclopædia: art. BAT.

their turn, preyed upon by the owl. Moles are exceedingly voracious, and it is said they die of starvation if kept twelve hours without food; if two are confined together, the strongest will, if hungry, devour the weakest, even to the bones. Farmers are no friends to these little creatures, as by turning up the earth they expose the roots of plants, or overthrow them by burrowing; but many agriculturists think they make ample amends, by the destruction of earth-worms and other noxious animals.

The fur of the mole is very soft and thick. "Fur of every kind may be regarded as a species of organ of what is called touch, not in the mere pile of the fur, but in the sensation which is instantly communicated to its roots, as we find in many instances, especially in those whiskers of nocturnal animals which guide them in their rambles. Upon the same principle, there is no question that the exquisitely delicate fur of the mole, which yields to a touch quite imperceptible to us, is one of the finest organs of feeling in the whole animal kingdom. Nor is there any doubt, that this fur communicates to the owner the slightest concussion of the earth over its nest or its gallery."* This quick sense of touch makes ample amends to the mole for

* British Cyclopædia: art. MOLE.

the deficiency in that of sight, which, indeed, would be a useless gift to an animal destined to a subterraneous existence. But even this deficiency is not so great as has been supposed; the idea of the total blindness of the common mole is an error, which has been handed down from one naturalist to another since the time of Aristotle, who, in all probability, took his opinion from the species living in Italy, Greece, and other parts of the south of Europe, in which the eyes are merely rudimental, not larger than a grain of mustard-seed, and with no opening in the lids.

There is a passage in Shakspeare's 'Romeo and Juliet,' which has been quoted by almost every describer of the mole, since the time Shakspeare wrote. But notwithstanding the number of times this short passage has been alluded to, we shall quote it again for the purpose of doing justice both to the mole and to the poet. The passage to which we allude is as follows:—

“Pray you tread softly, that the blind mole may not
Hear a foot fall.”

The scene of this passage is laid in the neighbourhood of Venice, and the mole of that country is the blind one, but whether Shakspeare was aware that the moles of that country have the eyelids unopened, is a question which we

cannot solve. The probability is, that, like most others, he had taken his notions of the animal from the description of Aristotle, or rather from the popular opinion grounded on that description; and that Aristotle described this blind or southern mole, for our mole has not only eyes, but very brilliant ones, though they are very small. The difference in the eyes of these two species is supposed to be owing to the greater abundance of under-ground food at the disposal of the mole of southern latitudes, which prevents the necessity of their seeking it on the surface, where the eyes of the English mole are valuable to them. How remarkable is the constant adaptation of means to the end required, in every part of the creation!

The mole is usually a solitary animal, each having its own habitation, which is constructed with great care, generally near a wall or the roots of a tree, which form a shelter: it is dome-shaped so as to drain off the water, and sufficiently hard and firm to prevent the rain penetrating through; the interior consists of two galleries and a circular dwelling, which are all connected by means of sloping passages. This habitation is formed in the latter part of the summer, and is used by the mole as a resting-place from the time the autumnal rains commence, until the return of summer.

The mole is mentioned in our translation of the Scriptures in the following verse :—Isaiah ii. 20 : “ In that day a man shall cast his idols of silver and his idols of gold, which they made each one for himself to worship, to the *moles* and to the bats.” The original word has been very variously rendered. In the Septuagint it is translated *vanities*; in other versions, *pits*, or *holes*; but it is more generally understood to mean some one of those animals which burrow in the ground; and it is probable that the word rendered “ mole” did not define any particular animal of this class, but was intended to intimate that the idols should be cast into dark and secret places, such as are inhabited by the mole and the bat, or by animals possessing similar habits.

The old English name of the mole, of which the present is merely a contraction, was *mouldiwarp*, or *mouldwarp*, which simply means that which casts up the soil. In some parts of Scotland this is changed into *moudiewark*, or *moudie*; all containing allusions to the mode in which the animal works in the mould. There is a species existing at the Cape of Good Hope called the golden mole, from the extreme brilliancy of its hue. That of England is called *Talpa Europæa*; the blind mole, *Talpa cæca*.

ORDER CARNIVORA.

URSUS.—The Bear. (Plate I., the Syrian Bear.)

These well-known animals are remarkable for their massive limbs, and clumsy, heavy appearance. They have five-toed feet, armed with strong claws, more calculated for digging in the ground and climbing trees than for tearing their prey. They are omnivorous in their diet, some living entirely on vegetable food; others being carnivorous: though they will rarely attack man, unless extremely pressed by hunger, when they are very formidable antagonists. Honey is said to be a favourite repast with many species, and they will climb high trees for the sake of plundering the nest of the wild bee; they also eat the eggs and young of birds, small animals, carrion, and fish, as in the case of the polar bear, who must depend chiefly on what is thrown up by the sea for his somewhat precarious subsistence. From the peculiar formation of the shoulder-bones, which are not kept apart by clavicles as in most other animals, the bear is enabled to grasp and hug between the fore legs, much more powerfully than would have otherwise been the case, thus strangling any unfortunate animal that falls into its power by strong compression of the chest: this peculiarity

also enables it to climb without difficulty. The teeth of the bear are comparatively small and blunt, consequently not well adapted for feeding on flesh in its fresh state; and this agrees with the known fact, that the bear never attacks living animals, if it can find food more easily managed.

Bears of some species or other are to be met with in every latitude. In Europe, Asia, and America, they are pretty widely diffused, but are rarely found in Africa: indeed they appear more suited to the cold or temperate climates, and here accordingly they are seen in their greatest vigour and perfection. They do not seem to extend to the southern hemisphere, excepting perhaps in the Andes, where there is a great variety of climate; none have been discovered in New Holland. Bears live chiefly in dens and caves, or in hollow trees: they hybernate according to the climate, and during the period of torpor of course cease to eat, living on the accumulation of fat they have acquired during the time of activity, and making their reappearance in a very lean and exhausted condition.

The Brown Bear (*Ursus Arctos*) is so called from its prevailing colour, but this colour varies through every shade, from sooty black to dirty white. It is found in almost every climate, from the shores of the Frozen Ocean to the

burning deserts of Libya and Numidia, and is, without doubt, the animal referred to in the Scriptures. It is still found in Western Asia, and, though but rarely, in the wildernesses bordering on Palestine. This species is found in so many places, and varies so much in size and colour, that it has frequently been divided and subdivided into species and varieties; but from the perfect resemblance in the skeleton, and in the habits, of the bear inhabiting the Pyrenees, the Alps, and the mountains of Lapland, the range of the Himalaya, and the shores of the Polar Sea, it seems probable that the difference in colour and appearance is merely the result of climate, and the brown, black, cinnamon, and white bears, instead of being distinct species, are probably not even distinct varieties, the colour merely changing from one generation to another, as well as in different individuals.

The *Ursus Arctos* feeds on wild honey, fruit, &c., and those of Siberia, being well fed, are by no means formidable; women and children ranging about with perfect safety, even in the forests where they abound. "As they are not much disturbed except towards the close of the season, when they begin to get fat, they are not timid any more than forward, and it is possible to pass them as closely and as safely as if

they were sheep. The sudden appearance of a person in an unwonted dress alarms them, and makes them take flight; but it is said that the most efficient bugbear is an umbrella, the expanding of which makes them roar and run with all their might; an umbrella is, indeed, an object of more dread to most wild animals than the most efficient weapon that man can brandish. A fierce bullock is more certainly turned by flashing an umbrella open in his face, than by any other means; and there are recorded instances of the tiger being put to flight in the same way.”*

The abundance of these bears in the mountains of Switzerland in former times, gave the name of Berne to one of the Swiss cantons, and at that place bear-pits are still kept up in honour of the name; the inmates being fed on vegetables and bread; all unripe fruit brought to the market is also confiscated for their use.

The intense affection shown by the female bear for its young, is illustrated by many interesting anecdotes in voyages and travels. In Lord Mulgrave’s narrative of a voyage for the discovery of the North-west Passage, is a very interesting account of a bear, whose young had been killed by a shot from the ship. Though wounded herself, she

* British Cyclopædia: art. BEAR.

would not leave her young behind; not understanding they were dead, she placed food before them, and by every affectionate motion tried to induce them to eat; she then endeavoured to raise them, withdrew to a short distance, and looked back, expecting them to follow, but seeing them still motionless, she returned, and with inexpressible fondness walked round, licking their wounds and moaning bitterly. At last, as though convinced that they were indeed dead, she uttered a fierce and bitter growl, which was answered by another and more merciful shot, laying the affectionate animal dead beside her young.

So fine a trait in the character of the bear was not lost on the sacred writers, and consequently it occurs as a simile in many parts of the Bible. In Proverbs xvii. 12, "Let a bear robbed of her whelps meet a man, rather than a fool in his folly;" and again, 2 Samuel xviii. 8, "They be chafed in their minds as a bear robbed of her whelps." There is a similar expression in Hosea.

The narrative related in 2 Kings ii. 23, where bears were made the instrument of punishment to the profane despisers of Elisha, is another proof that the Syrian bear (*U. Syriacus*, Plate I.) was then a common inhabitant of the country. It will not be deemed out of place, in connection with this

subject, to explain the term "little children" as used in this chapter, which has often given rise to animadversion. "The term is the same which Solomon applied to himself when not much, if anything, less than twenty years of age, and which is elsewhere applied to young but full-grown men. The translation 'little children' is, therefore, calculated to give a wrong impression of this transaction. They were, doubtless, profane young men, of the city where the golden calf was worshipped, well enough able to know what they were about; but who, nevertheless, poured forth not merely, or principally, expressions of personal contempt to Elisha, but of derision at the translation of Elijah, when they thus abusively told him to 'go up' after his master. Their act, therefore, did not incur the fearful punishment which followed, merely as an act of disrespect to the prophet, but also as a grievous insult to the power and majesty of God."*

To the use of the bear, either as food, or of its fur in clothing, we find no allusions in the Scriptures. It was certainly not eaten by the Jews, being included amongst those animals which, from their conformation, were considered unclean, and were forbidden to them; the fur would also

* Pictorial Bible—2 Kings ii.

be more esteemed in colder climates. To the Kamtschadkales it is most valuable in various ways. They make of it beds, coverlets, caps, gloves, and collars for their sledge-dogs, also soles for their shoes, which have the advantage of not slipping; the flesh is reckoned a great dainty, and they usually invite friends to partake; window-panes are made of the intestines, which are as clear and transparent as Muscovy glass. A light black bear-skin is one of the most costly articles in the winter wardrobe of a gentleman in Russia, and the ladies wear very large bear muffs, half-concealing their elegant shape.

MELES.—The Badger.

This animal has very short nails, the toes very much covered by skin, and a pouch from which issues a strong and fetid smell. The nails are powerful and formed for digging; the body thick, and legs short. The colour is generally brownish-grey, with a black band on each side of the head. Badgers are easily tamed when treated with kindness, becoming playful and familiar. They burrow in the ground, the entrance to their habitation being usually placed in concealment, under tangled herbage or shrubs.

There are only two species, *Meles vulgaris*, the common badger, and *Meles Labradorica*, the American badger. The

former measures about two feet and a half in length, and the tail, which is clothed with long hair, half a foot more. The hair of the body is long, close, and fine; the skin, with the hair on, is employed in making Highland pouches, and the hair is used for painters' brushes. The common badger is very generally distributed over the colder parts of the temperate portion of Europe and Asia. It does not seem to have been known to the Greek naturalists, but the Romans were acquainted with it under two names, *Meles* and *Taxus*. At that time the locality of the badger was probably in a more southern latitude; for it is certain that the climate of Europe has much changed in character. It seems, however, very doubtful whether the badger extended so far to the south-east as to be known to the Hebrews when wanderers in the desert, which would, too, have been an unnatural haunt for this animal; consequently, the expression used in Exodus xxv. 5, when describing the erection of the Tabernacle, is probably one of those which must be considered as not giving strictly the sense of the original: an error, consequent on the very imperfect knowledge of natural history at the time when the translation of the Bible was made.

The following explanation of this difficulty is from the

‘Pictorial Bible :’—“It is uncertain what is intended by the word rendered ‘badger.’ Some take it to mean a preparation of leather, as morocco ; all the ancient versions regard it as a colour of leather or skin, and point out crimson or different shades of blue. The Jewish traditions concur in this view with some exceptions, and it is supported by the analogy of the third covering next beneath this, which was of ‘sheep-skins dyed red.’ Many, however, with our translators, regard the *tahash* as the name of an animal, but differ greatly as to the species. As Gesenius remarks, the construction favours this interpretation, and he adds, that several Hebrew interpreters explain it by the weasel or martin ; others by the badger. But in Arabic *tahash* signifies the dolphin, with which the ancients, in common life, classed the seal. ‘Seal-skins’ would certainly make a good sense, and would be tolerably applicable to all the passages in which the word *tahash* occurs. But we are still inclined to think, that to understand it as a colour, perhaps purple, is the better alternative.”

PUTORIUS (*Mustela*) VULGARIS.—The Weasel.

This is the smallest of its tribe, measuring eight inches in length and two and a half in height. The colour varies in different climates, but generally the upper parts and legs

are pale brown, the under parts white; the eyes are small and black. It is very generally distributed over the cold and temperate regions of the world, and is remarkably agile in its movements, possessing an extraordinary degree of flexibility, which enables it to make its way through an almost incredibly small space. The weasel lives on small animals, leverets, young rabbits, mice, &c., seizing its prey by the neck, when its bite very speedily causes death: it then sucks the blood, and keeps the flesh till it has become sufficiently "high" for its taste. The female makes a bed of leaves and moss for her brood, feeding them with fresh eggs and small animals; she has only one litter in the year.

This little creature is very bold for its small size, and often attacks animals much larger than itself. The following curious story is told of one in Scotland, by Mrs. Lee, in her useful 'Elements of Natural History.' "An eagle was seen by some haymakers, rising in the air with a peculiar flight; he flapped his wings with violence, as if much alarmed and agitated, and rapidly ascended; in a short time, however, he descended with still greater rapidity, tumbling down like a shot bird. When he reached the earth, the party observing him ran to ascertain the cause of this occurrence, when a large weasel ran from the body,

stood upon its hind legs for a few moments to survey its enemies, and then went into the neighbouring wood. On examining the eagle, it was dead, having been killed by a wound in its throat, supposed to have been made by the weasel. This supposition was confirmed by a similar attack having been made by a weasel on a grouse, which flew away with the animal hanging to it."

The weasel is mentioned in the list of unclean animals in the 11th chapter of Leviticus, verse 39, and is there classed with the reptiles; but the word in the Syriac signifies a creeping movement, which is very applicable to the weasel. The Vulgate and Septuagint agree with our version. The name was very probably given also to some of the lizard tribe, and in this case one of these might be meant.

MUSTELA FURIO.—The Ferret.

This little animal measures about thirteen inches, exclusive of the tail, which is about five more; it has a sharp nose, red and fiery eyes, and round ears; the colour is pale yellow, sometimes mixed with white, black, and brown. In its wild state it is a native of Africa, whence it was brought into Spain, and has gradually been introduced into other European countries. It sleeps almost continually during the cold weather, our climate being, in fact, too severe for it,

except in a domesticated state, and it is necessary to keep it in a box lined with wool; its favourite food is the blood of small animals, and it is naturally an enemy to rabbits, which circumstance man has turned to account, by making it the instrument of their capture. When sent into the burrows of rabbits, the ferret is always muzzled, that he may not kill them in their holes, but only drive them out, to be caught in the nets prepared for the purpose. If the ferret becomes unmuzzled, he is often lost, for after sucking the blood of his victim he frequently falls asleep in the burrow; and there, in the midst of abundance, he remains till the severity of the winter cold destroys him. The ferret is of an irritable nature, emitting a very disagreeable odour when provoked, and its bite is difficult to cure. The female has two broods in the year, each consisting of from six to nine. Though this little animal has been introduced into Europe at least two thousand years, it has never become sufficiently inured to the climate to pass into the wild state.

The ferret is included in the list of unclean animals mentioned in the 11th chapter of Leviticus; but it seems much more probable that the translation is an incorrect one, than that this native of Africa should have been known so commonly to the Hebrews, as to render its inter-

diction as an article of food necessary. The alternative seems to be some species of lizard, "perhaps the *Lacerta gecko*, a species found in countries bordering the Mediterranean; of a reddish-grey, spotted with brown. It is thought at Cairo to poison food over which it passes, and especially salt provisions, of which it is very fond. It has a voice somewhat resembling that of a frog, which is intimated by the Hebrew name, importing a sigh or groan."*

CANIS FAMILIARIS.—The Dog.

This well-known and most useful animal would, from its familiarity to every one, seem to need little description, and the number of the species, supposed to amount, with varieties, to a hundred, would render it impossible to enter into any detail respecting it. The dog is arranged by Cuvier in three divisions, depending on the length of the muzzle: the long-muzzled dogs include those most nearly in a state of nature, such as the wild dog of Nepal, *Canis primævus*, considered by Mr. Hodgson to be the original stock of all the domestic varieties; those which have this part of a moderate length, including those species which are the most serviceable to man, of which the shepherd's dog is an example; and the third division, which embraces the short-

* Pictorial Bible.

muzzled dogs, many of which are large and ferocious. The half-wild dogs of India, Africa, and Australia, the numerous tribe of hounds, terriers, spaniels, and sporting dogs, all belong to the first division. The second boasts of the noble Newfoundland, the useful and sagacious shepherd's dog, without whose invaluable assistance, the Scotch mountain pastures would be almost useless; the cur, and the turnspit, whose labours in the kitchen are superseded by the march of invention. The third includes the bull-dog and mastiff, which, though in many ways serviceable to man, have neither the swift motion nor the affectionate and playful disposition of the first two divisions, being generally surly in temper, and snappish to all but their immediate protectors. That the ferocity of the most savage dogs is mixed with much that is amiable and intelligent, is proved by an anecdote which has recently appeared in the public prints. In consequence of an alarm of fire near Drury Lane, a poor woman contrived to get on the top of a chapel, and was making her way across the adjoining roof, when she fell through a skylight into a factory in which was kept a ferocious dog of the bull-terrier species. Guided by her groans, several men went to her rescue, but, fearing the dog, they hesitated. At length fourteen of them rushed in,

when, to their astonishment, they found the usually savage animal licking the woman, as if to console her, and, instead of rushing upon them, evinced the most lively joy that they had come to succour her. No species of this third division are ever found in a wild state.

The dog is considered old at fifteen, and few attain the age of twenty. A small terrier was given to the author's family, as being too aged for use, and said to be seventeen; at all events, she had lost most of her teeth, and her hair was turning grey; but "Fan" so attached herself to the family, and particularly to one member of it, who was then an invalid, and so endeared herself by her intelligence and extreme affection, that every care was taken of her, and she lived eight years after her introduction into the family, when her sufferings from a bad cough made it necessary to have her destroyed, to the great regret of her friends; for "poor old Fan" was a universal favourite. Her bright black-and-tan coat was thickly besprinkled with grey, and her head nearly white some years before she died.

The English reader of the Bible is often surprised at the contemptuous manner in which these interesting and affectionate animals are mentioned in the Sacred Writings; but the disposition of the dog, as known to us, is in a great

degree the result of domestication and kind treatment. In the East they have neither of these advantages, and are therefore fierce, cruel, and greedy, a character they maintain to this day; for Mohammedanism proscribes them as unclean, and hence, though they are very numerous in the towns of Western Asia, they belong to no one, and, subsisting on any chance food they may pick up, become ferocious and savage to a degree unknown to us. Indeed, in many places it would be very dangerous to go into the streets alone, or unarmed at night; and even powerful and resolute men are sometimes prevented from entering the gates, unless under the guidance of an inhabitant to overawe the dogs. This quality renders them very serviceable to the Arabs and other nomade tribes, in the care of their flocks; but still they will not bear any comparison with our faithful and sagacious shepherd's dog.

Bloodhounds were formerly trained for the chase, and for warlike purposes. These dogs were very dangerous, and the Psalmist probably alludes to them when he says, "Deliver my soul from the sword, and my darling from the power of the dog." And in the Book of Proverbs is the following adage: "He that passeth by, and meddleth with strife belonging not to him, is like one that taketh a dog by the ears."

The texts in proof of the generally contemptuous opinion entertained of dogs in the eastern countries, are very numerous, such as in Psalm xxii. 16: "For *dogs* have compassed me about; the assembly of the wicked have enclosed me." In 1 Samuel xvii. 43, Goliath says, "Am I a *dog*, that thou comest to me with staves?" And Job declares, "But now they that are younger than I, have me in derision, whose fathers I would have disdained to have set with the dogs of my flock." Many other instances might be mentioned, but these will suffice. In the New Testament the expressions are of a like character, investing our beautiful and interesting favourite with the most hateful qualities; though Christ, in his beautiful parable of the rich man and Lazarus, records an affecting proof of their gentleness. In many profane authors similar feelings are testified; even "Homer's heroes call each other dogs with great spirit;" but modern poets are more just to the character of this faithful animal. A short extract from Byron's well-known lines on a Newfoundland dog will prove his sense of its worth; and many other passages will probably recur to the memory of the poetic reader.

"But the poor dog, in life the firmest friend,
The first to welcome, foremost to defend;

Whose honest heart is still his master's own,
Who labours, fights, lives, breathes for him alone;
Unhonoured falls, unnoticed all his worth,
Denied in heaven the soul he held on earth;
While man, vain insect! hopes to be forgiven,
And claims himself a sole exclusive heaven."

These last lines agree in feeling with the belief entertained by the Indian warrior, who thinks that his favourite dog will bear him company to the "happy hunting grounds," a feeling beautifully expressed in the well-known lines—

"Lo, the poor Indian! whose untutored mind
Sees God in clouds, or hears him in the wind;
His soul proud science never taught to stray
Far as the solar walk, or milky way;
Yet simple nature to his hope has given,
Behind the cloud-topt hill, a humbler heaven;
Some safer world, in depth of woods embraced,
Some happier island in the watery waste,
Where slaves once more their native land behold,
No fiends torment, no Christian thirsts for gold;
But thinks, admitted to that equal sky,
His faithful dog shall bear him company."

The numerous anecdotes which might be related, to illustrate every interesting point of the dog's character, would fill a volume, and, though greatly tempted to record some of them, I must refrain. There is an amusing and well-

chosen collection in 'Chambers's Miscellany,' a work which ought to be accessible to all young readers.

CANIS LUPUS.—The Wolf.

Though nearly allied to the dog, we lose in this animal all the affectionate and endearing qualities of its domesticated relative, and though now entirely free from its ravages in England, it is still the scourge of many of the European countries during the severe weather, which, by curtailing the supply of food in the forests, emboldens it to attack travellers, and prowl about the villages, in large troops, whose savage ferocity is only equalled by the perseverance with which they track and follow their victims, whether man, horses, or sheep.

The first mention of the wolf in the Bible gives the same idea of stealthy ferocity to its character which it possesses in the present day. In Genesis xlix. 27, "Benjamin shall ravin as a wolf; in the morning he shall devour the prey, and at night he shall divide the spoil," intimating that day and night its delight is to seize and tear its prey; which agrees with the description given it by travellers, as constantly on the prowl, with apparently an insatiable appetite; most commentators agree in referring the comparison here made, to the fierce and unjust contest in which the

tribe of Benjamin engaged with the other tribes, and in which it was almost exterminated. The prophet Habakkuk makes use of the expression, "more fierce than the evening wolves;" and in Zephaniah a similar text may be found; showing that the savage character of this animal was well known to the ancient writers, and that it must have been pretty common in Palestine at the time they wrote: at the present time but few of the wilder animals are found in that country.

CANIS VULPES (or *Vulpēs vulgaris*).—The Fox.

This animal, as well as the wolf, is now considered as belonging to the extensive genus *Canis*, dog, from which the fox differs but little in organization; the formation of the teeth is very similar, the feet and toes are also alike. The distinguishing characteristics seem to lie in the somewhat different form of the eye, the superior length and greater thickness of fur on the tail, and the nose being more elongated and pointed. The fox differs essentially in habit from other canine animals: it is more decidedly a dweller in the ground, making holes or excavations, technically called "earths," for its dwelling-place; and another peculiarity is its never joining in bands for any common purpose, but being quite solitary in its operations,—in this respect differ-

ing greatly from the wolf, jackal, and probably the dog in a state of nature.

Foxes are found in most parts of the world, but are far more abundant in the temperate and cold climates: from the severity of the latter, their thick warm fur forms an adequate protection. They live on small animals, such as hares and rabbits, the latter of which they dig from the warren, and game of all kinds, which they destroy in great quantities; when these are scarce, they make war on rats, field-mice, serpents, lizards, toads, and moles; roots and insects do not come amiss to them when pressed by hunger, and grapes and other sweet fruits are considered a dainty, as well as honey, for which they will attack and ransack the nests of the wild bee. The female fox makes her nest of leaves and hay; the young ones, from three to eight in number, are born blind, and much resemble young puppies. The skin of the fox, being furnished with a soft warm fur, is much used for muffs, boas, and other similar purposes; great numbers are, therefore, taken in the alpine districts of Switzerland, and imported from Newfoundland and the countries round Hudson's Bay. The flesh of the fox is coarse and rank, but is eaten by the natives of the latter countries, and even in some parts of Europe, where

the animals are fattened on the spoils of the vineyard during the vintage.

The common fox of England (*Canis Vulpes*) is fawn-coloured, intermixed with black and white. The arctic species (*C. lagopus*) is usually of a bluish-grey colour, though sometimes found entirely white; it inhabits the cold regions of the polar circle, particularly in Kamtchatka, subsisting on young wild geese and other water-fowl. Steller relates, that when he was travelling, he met with great numbers of these little animals. "When we made a halt by the way," he writes, "they gathered round us, and played a thousand tricks in our view. When we sat still they approached us so closely, that they gnawed our shoe-strings; if we lay down, as if intending to sleep, they came and smelt at our noses, to ascertain whether we were dead or alive." There are various other species in both the Old and New Worlds.

The common fox was, and still is, of frequent occurrence in Palestine; but as the original word *Shual* was equally used by the Hebrews to signify the Jackal (Plate I.), it is believed by commentators, that this latter animal is, in most cases, meant. It is the *Canis aureus* of naturalists, about the size of the fox, the colour dirty yellow above and

white beneath, with a dark mark on the back and sides. Jackals associate together like wolves, forming large packs, often amounting, in Palestine, to two or three hundred, thus differing from the fox, which is not gregarious; their howlings are fearful, hence their Hebrew name *ayim*, "howlers," which is improperly rendered, in Isaiah xiii. 22, xxxiv. 14, and Jeremiah ii. 39, "wild beasts of the islands." Jackals, like foxes, live in holes in the ground, and are very numerous in ruined towns, from which circumstance, the prophets, in describing the future desolation of a city, say it shall become the habitation of jackals; a prediction verified by the actual condition of the towns to which the prophecies apply. It is evident that this animal, and not the fox, is alluded to in the account of the marriage of Samson in the 15th chapter of Judges, as the latter would have been very difficult to find in so great a number, while with the former it would be comparatively easy, from their being found in large packs. This obviates the difficulty which has often been felt with regard to this incident, particularly as it is not necessary to suppose that Samson caught the whole number himself, or at one time. The animals being tied together in pairs, was, no doubt, intended to prevent them from retreating to their holes, before the

brands had effectually set fire to "the standing corn of the Philistines, and burnt up both the shocks and also the standing corn, with the vineyards and olives." The idea of such conflagrations being caused by foxes, seems to have been prevalent with the ancients. "Thus Lycophron makes Cassandra represent Ulysses as a cunning and mischievous man, the 'man for many wiles renowned,' of Homer, and styles him a fox with a firebrand at his tail. And in Leland's 'Collectanea,' there is an engraving representing a Roman brick found below a pavement in London, in 1675, on which is exhibited, in basso-relievo, the figure of a man driving into a field of corn two foxes, with fire fastened to their tails."*

FELIS LEO.—The Lion.

This well-known animal is the most formidable of the carnivorous tribe. It is distinguished from the rest by its flowing mane, tufted tail, and the absence of all those markings which characterize the feline race. The lion principally inhabits the wilds of Africa, for though found in the hotter regions of Asia, it is far less plentiful in that locality. A full-grown lion sometimes measures eight feet from the nose to the tail, which is itself about four feet in

* Pictorial Bible.

length ; the general colour tawny, inclining to white beneath ; the head is very large ; the ears rounded ; the face covered with short hair, while the upper part of the head, the neck, and shoulders are coated with long shaggy hair, which forms a mane ; the tail is tufted with black. Neither the mane nor the tuft on the tail are fully developed, till the animal is six or seven years old. The female is smaller, destitute of a mane, and whiter underneath.

The lion, like the rest of the feline tribe, sleeps during the day, his eyes not being formed for strong light. As night sets in, he rouses from his lair, and begins his search for prey, when his roar resembles distant thunder, putting to flight every animal within hearing. His strength is prodigious, enabling him to carry off a buffalo or antelope with the greatest ease, and his teeth are so strong, that he breaks their bones without difficulty ; the tongue, as in other feline animals, is covered with reversed prickles, which, in the lion, are strong enough to tear the skin ; and the muscles belonging to the jaw, as well as those which support the head, are very strongly developed. The lioness has only one brood in the year, generally from two to four in number, which she nurses with great care and assiduity. The usual period of a lion's life is supposed to be about twenty-two

years, but instances are recorded of their attaining a much greater age.

Many naturalists contend that there is a distinction between the African and Asiatic lion, but this is denied by Buffon and Cuvier, though many modern writers state that the African lion is larger, more graceful in form, of a darker colour, and with a less abundant mane. It was from Africa that the Romans procured the prodigious numbers of these noble animals, which they exhibited in their public spectacles. Quintus Scævola is said by Pliny to have shown a combat of lions for the first time in Rome; Sylla, the dictator, exhibited a hundred; Pompey the Great no less than six hundred, in the grand circus; and Cæsar four hundred. Mark Antony appeared in the streets of Rome in a chariot drawn by these noble but dangerous creatures. The conquerors of the world seem truly to have held a control over the king of beasts, with which we cannot compete, for the miserable exhibitions of modern times appear generally to have a fatal termination.

It is very evident that the lion formerly abounded in Palestine, some places, indeed, deriving their name from these animals, such as Lebaoth and Beth-lebaoth; that they are not now met with is no matter of surprise, as many wild

animals have entirely disappeared from localities where they formerly abounded ; but lions are still found in many parts of western Asia, particularly near the rivers Tigris and Euphrates. The lion is mentioned in various parts of the Bible. In the 14th chapter of Judges one is slain by Samson, and is afterwards found inhabited by a swarm of bees, thus giving rise to his famous riddle, "Out of the eater came forth meat, and out of the strong came forth sweetness." Again in 2 Samuel, ch. xvii., the lion is made the symbol of strength and courage : "He that is valiant, whose heart is as the heart of a lion." This metaphor is by no means peculiar to the Bible, and it is frequently used in the poetry of Greece and Rome : we also use the same comparison, considering the term applicable to our *lion-hearted* King Richard. In the 12th chapter of the first book of Chronicles occurs the singular expression, "Men of war, fit for the battle, that could handle shield and buckler, whose *faces were like the faces of lions*." This is a forcible comparison, for few things in the animal creation are more terrible than the appearance of an enraged lion. The 'Pictorial Bible' has the following remark on this text :—"We are inclined to suspect that the sacred historian had also in view the strong resemblance which the face of the lion bears to that of man.

Aristotle thought this resemblance greater than existed in any other animal, and we are not aware that our acquaintance with a great number of animals not known to him has tended to weaken this conclusion. There is no other animal, the face of which is compared to the human, in Scripture."

The allusions to the "king of beasts" are too numerous to particularize, but there is an interesting parable in the prophet Ezekiel, in which a lamentation for the princes of Israel is expressed under the figure of lions' whelps taken in a pit, to which I would call the attention of my readers, as a specimen of oriental imagery, showing that the habits of the lion were well understood by the prophet. The first lion's whelp is supposed to signify Jehoahaz, who was carried prisoner into Egypt by Pharaoh Necho; the second, Jehoiakim, or his son Jeconiah, in all probability the former, as it is said in 2 Chron. xxxvi. that Nebuchadnezzar bound him in fetters, to carry him to Babylon.

The hunting of the lion, as well as other wild animals, formed a great amusement in most oriental countries, and this practice, no doubt, gave rise to much of the imagery the language of the prophets, in which are frequent allusions to nets, snares, and pits, showing the manner in which the denizens of the forest were subdued by the art of man.

Thus, in Psalms, "The sorrows of hell compassed me about; the *snare* of death prevented me." "The proud have hid a *snare* for me, and cords; they have spread a *net* by the wayside; they have set *gins* for me." In the sculptures on a rock at Takt-i-Bostan, in Persia, is represented a large enclosure, formed of poles and nets, into which the animals are being driven by hunters on elephants or horses, who are engaged in slaughtering them with spears and arrows. Plutarch mentions hunting nets belonging to the Macedonian conquerors, capable of enclosing a space measuring a hundred furlongs.

"The lion, as an ancient Christian symbol, is of frequent recurrence, more particularly in architectural decorations. Antiquarians are not agreed as to the exact meaning attached to the mystical lions placed in the porches of so many old Lombard churches, sometimes with an animal, sometimes with a man in their paws. But we find that the lion was an ancient symbol of the Redeemer, 'the lion of the tribe of Judah;' also of the resurrection of the Redeemer, because, according to an Oriental fable, the lion's cub was born dead, and in three days its sire licked it into life. In this sense it occurs in the windows of the cathedral at Bourges. The lion also typifies solitude—the wilderness,

and in this sense is placed near St. Jerome, and other saints who did penance or lived as hermits in the desert, as in the legends of St. Paul the hermit, St. Mary of Egypt, St. Onofrio. Further, the lion is an attribute denoting death in the amphitheatre, and with this signification is placed near certain martyrs, as St. Ignatius, St. Euphemia. The lion, as the type of fortitude and resolution, was placed at the feet of those martyrs who had suffered with singular courage, as St. Natalia. When other wild beasts, as wolves and bears, are placed at the feet of a saint attired as a bishop or abbot, it signifies that he cleared waste lands, cut down forests, and substituted Christian culture and civilization for paganism and the lawless hunter's life; such is the signification in pictures of St. Magnus, St. Florentius, and St. Germain of Auxerre."*

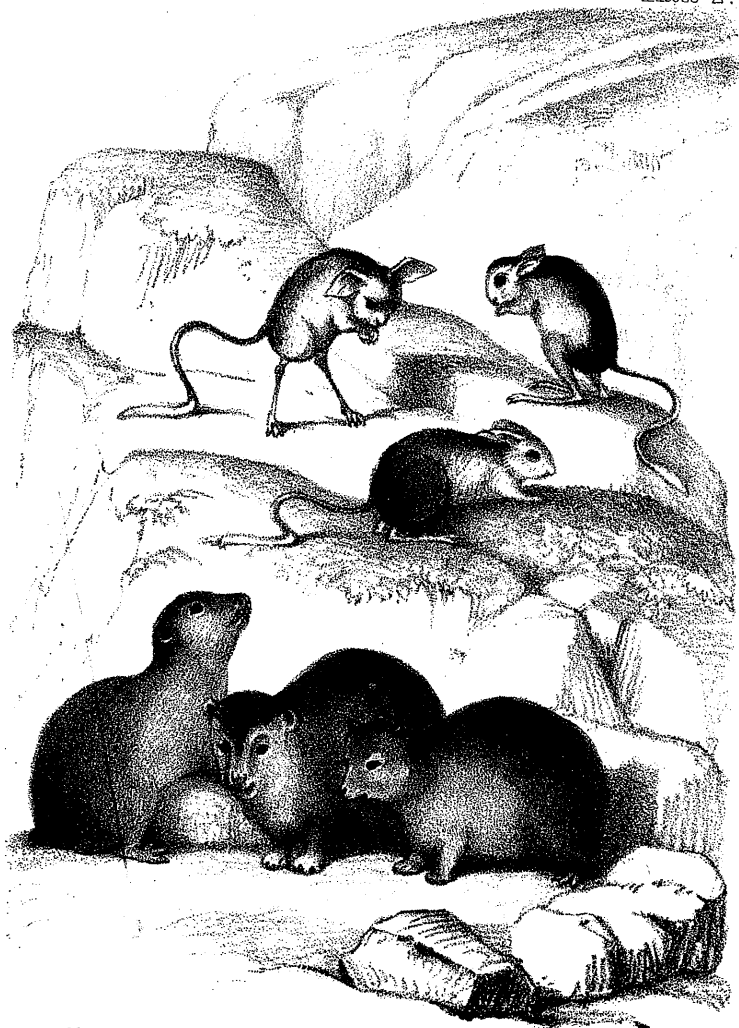
FELIS LEOPARDUS.—The Leopard.

The Leopard is about four feet in length, to the tail, which measures two and a half; the colour is pale yellow, with black spots, formed of a cluster of smaller ones. This animal is often confounded with the panther, from which it may, however, be distinguished by its lighter colour, and the comparatively small size of the markings, which are also

* Mrs. Jameson's 'Legendary Art.'

less distinct. The leopard is an active, graceful animal, fierce and rapacious, like most of its tribe, and is generally captured by means of snares or pitfalls. One species seems to have been of frequent occurrence in Palestine, as several places bear its name; there seems to be no question that the leopard was meant, as the word used denotes this animal in the Chaldee, Syriac, and Ethiopian languages; and in Jeremiah xiii. there is an allusion to its spotted skin: "Can the Ethiopian change his skin, or the leopard his spots?"

The leopard is still met with in Syria and Arabia, though by no means abundantly; its swiftness is proverbial in all countries where it is known, and suggested the idea of taming and using it in the chase. In Habakkuk, ch. i., is the following expression:—"Their horses also are swifter than the leopards." Harmer suggests that the figure here employed may have been more striking to the people, from their having seen the prodigious feats of leopards used in the royal chase. They were certainly thus employed in ancient Egypt, as is shown by their paintings; but it is rarely that they are used for this purpose in Western Asia at the present day, the practice being still common in the East. In India the *cheetah* is most frequently employed, and there seems little doubt that the species known to the



Jerboa.
Isaiah 66. 17.

Coney.
Proverbs 30. 26

ancients, and common in Palestine, was *Felis jubata*, the hunting leopard (thus agreeing with the frequent allusions to its swiftness); this species being now found in those countries known to the ancients, while the *Felis Leopardus* is principally obtained from the Eastern Archipelago, with which they had little communication.

ORDER RODENTIA.

DIPUS SAGITTA.—The Jerboa. (Plate II.)

There is no animal mentioned by this name in the Scriptures, but it is supposed that wherever the word *mouse* occurs, a species of *Dipus* is intended. The singular genus to which it belongs is a connecting link between the squirrel and the rat, while the enormous size of the hind legs and tail give it a great general resemblance to the kangaroo. The body of the most common species measures about eight inches, and the tail no less than ten, terminated by a tuft of black hair; the colour is a tawny yellow; the head is short, the ears thin, broad, upright, and rounded; the eyes large and dark; the fore legs about an inch in length, the hind legs extremely long, and greatly resembling those of a bird;

on each side the nose are several long hairs. This little animal generally stands on its hind feet, and leaps to a great distance; it employs the fore feet in feeding, putting to its mouth the corn and various vegetable substances on which it lives. Jerboas burrow in dry and clayey ground, making holes of considerable length, leading to large nests, which have generally only one opening, though there is commonly a passage to within a short distance of the surface, as a means of escape from danger; in these holes they sleep during the day, coming out at sunset. They are very abundant in Egypt and Syria; the flesh, though eaten by the natives of the East, is unsavoury. Mice are mentioned amongst those animals which were interdicted to the Jews as food by the laws of Moses, in Leviticus xi., and again in 1 Samuel vi., as "mice that mar the land:" this expression is particularly applicable to the jerboa, as its food being entirely vegetable, great numbers would indeed "mar the land," and prove very injurious to cultivation.

LEPUS.—The Hare.

The Common Hare, *Lepus timidus*, presents all the characters of the genus in so great a degree, as to form its most perfect type. Its sight and hearing are the most acute; its timidity is unequalled; and its swiftness is surpassed by

none. The usual length of the hare is about two feet, the colour reddish-grey above and white beneath; the upper lip is divided; the eyes large and prominent, and said to be constantly open even during sleep; the tail is very short, and turned up. It lives principally in dry and flat grounds; feeds at night on various kinds of herbage, preferring those of a milky and succulent nature; and often does great injury to wheat and young plantations. The female produces three or four young ones at a time, and has several broods in a year: they seldom exceed the age of seven or eight years, and many enemies besides man contribute to thin their numbers, which would otherwise multiply to an inconvenient degree.

There are many known species, such as *Lepus variabilis*, which is found only in mountainous districts in cold countries, changing its colour from black or dark grey to white, according to locality and climate, and even to the different seasons. *Lepus Capensis* is peculiar to the country near the Cape of Good Hope; it very much resembles *L. timidus* in colour. *Lepus Tolai* is rather larger than the common hare; it inhabits the plains of Mongolia and Tibet. Many varieties occur in different parts of Asia; and to one or more of these, reference is made in the 11th

chapter of Leviticus, where they are included with those animals forbidden by the legislator to be used as food by the Hebrews. "And the hare, because he cheweth the cud, but divideth not the hoof, he is unclean to you." The statement that the hare does chew the cud, has been disputed by naturalists; but Cowper, who domesticated three of these animals, says, "they chewed the cud all day;" thus confirming the decision of Moses. The hare is pursued and eaten by the Bedouin Arabs and other Mahomedan nomades, as they are found in great numbers in western Asia. They are not forbidden by the Koran as articles of food, but are classed by Moslem doctors as "abominable," though legally allowed.

ORDER PACHYDERMATA.

HIPPOPOTAMUS AMPHIBIUS. The River Horse. (Plate III.)

This gigantic animal is in bulk little inferior to the elephant, but its legs being much shorter, give it a more diminutive as well as more clumsy appearance. The head is immensely large, the mouth very wide, provided with large strong teeth, the tusks often measure two feet, and are



Hippopotamus.
Job. 40. 15.

Rhinoceros.
Deuteronomy 33. 17.



curved forwards; the lips are very thick, the nostrils and eyes small; the ears small and slightly pointed; the tail short, thick, and sparingly clothed with hair; the feet are large, and have four toes, terminated in separate hoofs. The general colour is dark brown, lighter underneath. The hippopotamus walks about at the bottom of rivers, raising its head at intervals for the purpose of respiration: at night it leaves its watery residence to eat the herbage that grows on the banks and in the neighbouring pastures; it also destroys trees, and commits great havoc in the maize, rice, and sugar plantations. The female produces only one at a birth, which she nurses with great care; the flesh is eaten by the Africans, and for this purpose the animal is taken by pitfalls.

The hippopotamus was formerly known in the lower regions of the Nile, but is at present seldom found in Egypt, though continuing to inhabit the rivers of Africa and the lakes of Abyssinia and Ethiopia. The word "hippopotamus" is not mentioned in the Bible, but the *Behemoth*, named in Job, ch. xl., is now generally supposed to be that animal, and, indeed, the description is singularly applicable. "Behold now Behemoth, which I made with thee, he eateth grass as an ox: lo, now his strength is in

his loins, and his force in the navel of his belly. He moveth his tail like a cedar. . . . His bones are as strong pieces of brass, his bones are like bars of iron. . . . He lieth under the shady trees, in the covert of the reed and the fens. The shady trees cover him with their shadow, the willows of the brook compass him about. Behold, he drinketh up a river and hasteth not, he trusteth that he can draw up Jordan into his mouth."

The word *Behemoth* is a very remarkable one; it is plural, and yet denotes one animal; whereas the singular of the same word is a noun of multitude, properly rendered by cattle or beasts. The plural form is applied to one animal to express its pre-eminence: what animal was intended has caused much discussion. All the alterations which have been suggested are limited to the animals belonging to Cuvier's class *Pachydermata*—thick-skinned. To this class equally belong the elephant, the hippopotamus, and some extinct species of enormous animals, as the mastodon, mammoth, and others. The determination in favour of the elephant has found some distinguished advocates, but if that remarkable animal had been intended, we should have scarcely failed, in so precise a description, to recognize some reference to its more peculiar characteristics,—its pro-

boscis, its tusks, its docility, and sagacity. It is possible that the creature here alluded to is extinct, but certainly the description agrees remarkably well with the hippopotamus, and still more so in the original than in our translation. The Jews have a curious and absurd notion on this subject. They hold that *Behemoth* is a large animal which has subsisted since the creation, and which is reserved to be fattened, for the feast to be enjoyed by pious Jews in the days of the Messiah. Every day he eats up all the grass of a thousand hills, and at each draught swallows as much water as the Jordan yields in the course of six months. Such is or has been their opinion*.

“He eateth grass as an ox.” This seems to have been considered and noticed as something remarkable; and it certainly is so in the case of the hippopotamus, which, being an inhabitant of the water, still eats the produce of the land. The last verse is in our translation very obscure, but that of Boothroyd agrees very well with an amphibious animal, such as the river-horse:—

“Lo, should a river overflow, he hasteneth not;
He is secure, though Jordan rush to his mouth.”

* Notes to the ‘Pictorial Bible.’

HYRAX SYRIACUS.—The Daman. (Plate II.)

This little animal, supposed by many writers to be "the coney" of Scripture, belongs to a curious genus of small rabbit-like animals, which chiefly inhabit Africa and Syria, living in rocky and mountainous districts, and leaping with great agility from one crag to another. They resemble rabbits both in size and colour; the limbs are short, and they are destitute of a tail; the head is rather small, the ears short and round, the eyes large and black. They subsist on grain, fruit, roots, herbs, and grass; are easily tamed, and prove lively, active, and docile when domesticated. "It is on the sole authority of the Rabbinical writers that the *shaphan* has been identified with the coney, or rabbit. That this conclusion cannot be correct is very evident, for the rabbit is not an Asiatic animal, and it is far from being solicitous of a rocky habitation, which is the distinguishing characteristic by which the *shaphan* is here denoted. Some, therefore, who reject this explanation, suppose the Jerboa to be intended; and this opinion has the sanction of Bochart, probably from his being unacquainted with the Daman, or *Hyrax Syriacus*, which corresponds far better than any other animal that has been found, to the brief intimations which the Scriptures convey. *Daman* is the

Syrian name of the animal; the Arabs call it *Nabr*, and the Abyssinians *Ashkoko*.* Its colour is grey, mixed with reddish-brown, and white underneath.

RHINOCEROS.—(Plate III. *Rhinoceros Africanus*.)

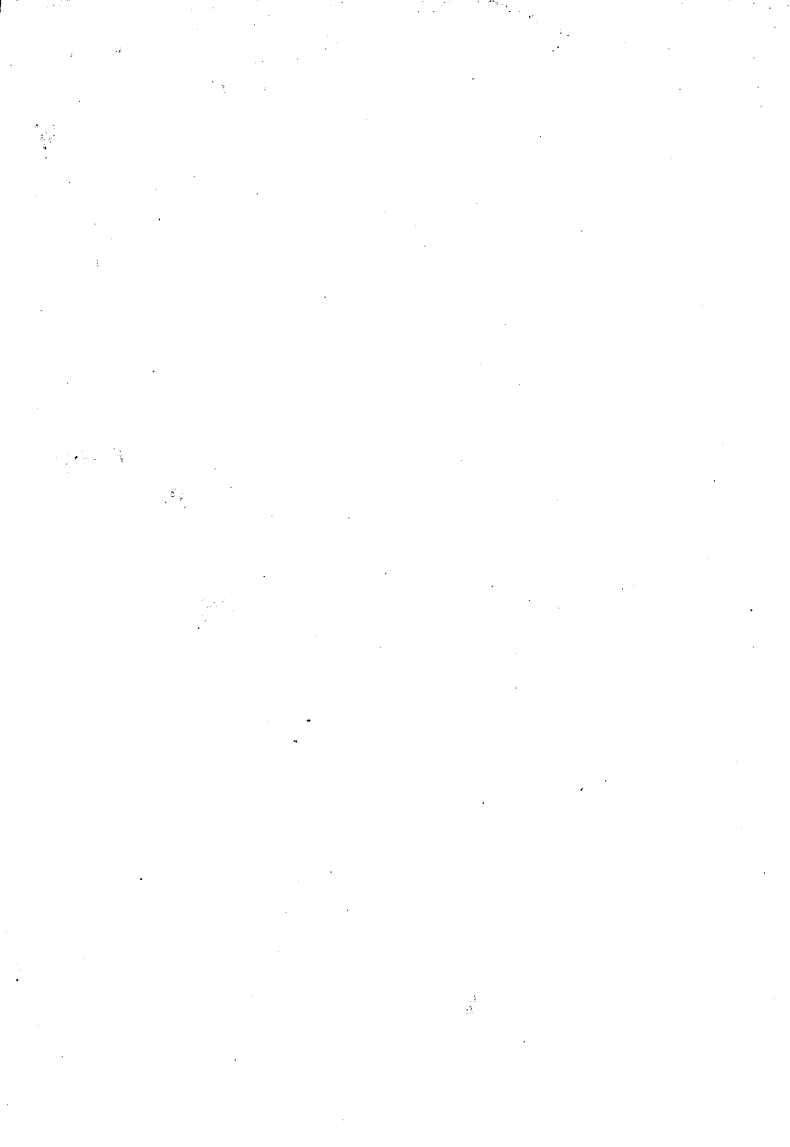
This uncouth-looking animal is supposed to be the *Unicorn* of the Scriptures; it inhabits the hotter regions of Asia and Africa: that of Asia is usually about twelve feet long, and seven in height; the head is rather large, having a very protruding upper lip, which is extremely pliable, and answers the purpose of a small proboscis; the ears are moderately large, and pointed; the eyes small, and half-closed; from the bones on the nose rises a slightly curved, solid, sharp-pointed horn, which sometimes measures three feet in length, though more usually about eighteen inches. The skin is thick and coarse, with a granulated surface, sufficiently impenetrable on the body and limbs to resist the claws of the lion or tiger, and the sword or shot of the hunter; the tail is slender; the legs short, strong, and thick, and the feet divided into three large hoofs. The rhinoceros is naturally of a quiet, peaceful disposition, but very dangerous when provoked, trampling down or ripping with its horn any animal which attacks or opposes it. It leads a

* Pictorial Bible.

tranquil life, lying on the marshy banks of rivers and lakes, and bathing in their waters. There are five or six species. *Rhinoceros bicornis*, found in various parts of Africa, has, as its name imports, two horns; the skin, instead of the regular armour-like folds of the preceding species, *Rhinoceros unicornis*, has merely a slight wrinkle across the shoulders and on the hinder parts. Another is met with in Java, with one horn; a fourth in Sumatra, with two; and one or more species in Africa, besides the *R. bicornis*, one variety found in southern Africa being white.

The original word used in Job and elsewhere is "*Reem*," rendered in the Septuagint "one-horned," equivalent to our "unicorn," but there is nothing in the Hebrew word which implies that the "*Reem*" had only one horn; and in the passage in Deuteronomy, ch. xxxiii., "His horns are like the horns of the *reem*," the word is singular, not plural, and should have been "unicorn," not "unicorns," as in our version, but it would have been inconsistent to have said "the *horns* of the unicorn," therefore the word was put in the plural*. In other passages one horn is only mentioned, as in Psalm xcii., "But thou wilt exalt, as the *reem*, my horn:" this, however, is no evidence against the animal in

* Notes to the 'Pictorial Bible.'





question having two horns, as it is not uncommon to speak of "the *horn*" of an animal that has really two, but never of the *horns* of a creature having but one. Some commentators, therefore, think the buffalo may be intended, but the greater number lean to the idea of a one-horned animal, and it has the sanction of the Vulgate, which gives *rhinoceros* as the equivalent of the word *monoceros*. The description given in Job xxxix. is as follows; but, contrary to that just quoted, respecting the hippopotamus, there are no distinctive traits by which the rhinoceros may be recognized:—"Will the unicorn be willing to serve thee, or abide by thy crib? Canst thou bind the unicorn with his band in the furrow? or will he harrow the valleys after thee? Wilt thou trust him because his strength is great, or wilt thou leave thy labour to him? Wilt thou believe him, that he will bring home thy seed, and gather it into thy barn?" Some writers consider the *reem* to signify the giraffe, as the word may be rendered "the tall animal;" but it is certainly one of the most difficult species to determine.

Sus.—The Hog. (Plate IV. Syrian Wild Boars.)

The wild boar, from which all the varieties of this useful and well-known family are derived, is a native of nearly all the temperate parts both of Europe and Asia. It is a fierce

and very powerful animal, armed with long and sharp tusks, capable of inflicting most dangerous wounds. The colour of the wild boar is a dark brindled grey, though when quite young it is marked by alternate dusky and pale bands; the snout is longer in proportion than in the domestic species, but the chief characteristic difference is the length of the tusks. The female is timid and inoffensive, but evinces the most determined courage if her young are in danger, and defends them with great fierceness. The wild boar was formerly a frequent inhabitant of our forests, affording an exciting though dangerous amusement to the lovers of the chase. By a forest law of William the Conqueror it was enacted, that any persons found guilty of killing a wild boar (excepting, of course, the privileged few), should lose their eyes; a law worthy of the barbarous times in which it was enacted.

The "swine" of Leviticus xi., in all probability, bore a much greater resemblance to the wild boar than to our quiet domestic animals. Their flesh was prohibited by Moses as food: "The swine, though he divide the hoof, and be cloven-footed, yet he cheweth not the cud: he is unclean to you." This interdiction is by no means peculiar to the Hebrews: the Egyptians, Arabs, and Phœni-

cians all agreed in disliking the animal, and forbidding its use as food. Herodotus mentions that, if an Egyptian even touched a hog, he immediately plunged into water, so polluted did he consider himself; and yet on certain occasions they not only sacrificed the animal to Bacchus and Luna, but afterwards feasted on the flesh. By his interdiction Moses therefore prevented the Hebrews from joining in these acts of idolatry, though the principal reason was no doubt the unwholesome qualities of the flesh, to a people who were peculiarly liable to leprosy and other cutaneous disorders. Michaelis says that leprosy was very general in Egypt, and that the Israelites probably left the country so far infected with this disease, that their lawgiver made many regulations on the subject, in order that the contagion might be weakened.

The next interesting mention of this animal is in Psalm lxxx., where, in speaking of a vine, the Psalmist says, "*The boar out of the wood doth waste it.*" In the Rev. J. Hartley's '*Researches in Greece and the Levant*' is the following interesting explanation of this passage:—"The force and beauty of this figure, derived from a practice connected with the wild boar, has probably been seldom observed. My friend the Rev. Mr. Leeves was proceeding, in the dusk

of the evening, from Constantinople to Therapia. Passing a vineyard, he observed an animal of large size rushing forth from among the vines. The Greek syrogee, who was riding first, exclaimed, 'Wild boar! wild boar!' and really it did prove a wild boar, who was retreating from the vineyards to the woods. 'What has the wild boar to do with the vineyards?' said Mr. Leeves. 'Oh,' said the syrogee, 'it is the custom of the wild boars to frequent the vineyards to devour the grapes.' And it is astonishing what havoc a wild boar is capable of effecting during a single night. What with eating, and what with trampling under foot, he will destroy an immense quantity of grapes. With what fatal propriety does this affecting image retain its force up to the present moment! Still is the vine of Israel broken down, ravaged, cut down, burnt with fire."

The oriental wild boars do infinite mischief to fields, plantations, gardens, and vineyards; and the custom of the Greeks and Romans, of sacrificing a hog to Ceres at the commencement of harvest, and one to Bacchus before the vintage, shows that they also suffered from their attacks on the corn-field and vineyard.

It would appear from the account in the 8th chapter of Luke, that the Jews reared swine, though they were for-

bidden to eat their flesh: "There was an herd of *many swine* feeding on the mountain." Indeed, there was nothing in the law of Moses to prevent their doing so, and this was accordingly done openly, for the sake of selling them to their heathen neighbours, until it was prohibited about seventy years before the Christian era. This interdiction is said to have arisen from the following circumstance:—"When Aristobulus was besieging Hyrcanus in Jerusalem, not wishing to interrupt the service of the Temple, he permitted an arrangement, under which money was let down from the Temple in a box, in return for which, the lambs required for the daily sacrifices were sent up. It at last occurred to a mischievous old man that there would be no overcoming the adverse party while they employed themselves in the service of God, and therefore one morning he put a hog in the box instead of a lamb. When half-way up, the pig reared himself up, and happened to rest his fore feet upon the Temple wall; whereupon, continues the story, Jerusalem and the land of Israel quaked. In consequence of this, an order was issued by the Council, 'Cursed be he that breedeth hogs.' Such is the origin of the order against rearing hogs, as related in the Babylon Talmud. One of the enforcements of this prohibition is curious, as

showing for what purposes, besides sale, hogs had been reared by the Jews; 'It is forbidden to rear any hog in order to obtain profit from its skin, or from its fat, for anointing or for light.' From this it would appear that the Jews had been wont to make ointments with hog's lard, and that they did not exclusively use oil for lights, but fat also, which was probably done, according to a method we have often seen in the East, by introducing a wick into a lump of grease, which is set in a lamp, or in a round, hollow vessel made for the purpose*."

That this prohibition was not strictly observed seems probable, from the account of this "herd of swine;" but they *may* have belonged to the heathen, who certainly lived with the Jews in the towns of the neighbourhood mentioned.

My readers will all recollect another mention of this animal which occurs in Matthew vii., "Give not that which is holy unto the dogs, neither cast ye your pearls before *swine*, lest they trample them under their feet, and turn again and rend you." The formidable tusks of the oriental wild boar would give great force to the latter part of this verse, to those who had seen the animal, or suffered from its ravages in their fields and vineyards.

* Pictorial Bible: notes to Luke viii.

ORDER SOLIDUNGULA.

EQUUS CABALLUS.—The Horse.

This useful and most beautiful quadruped is too well known to need much description. An old writer, Camerarius, says, that a perfect horse should have the breast broad, the hips round, and the mane long; the countenance fierce like a lion, a nose like a sheep, the head, legs, and skin of a deer, the throat and neck of a wolf, and the ear and tail of a fox. The hoof of the horse is broad and undivided; the teeth are of three kinds; the eyes large and rather prominent; the ears small and erect. The horse is well fitted to live on dry open plains, which are covered with short herbage, much better suited to his lips and teeth, than any other kind of food, but he must also be well supplied with water, of which he takes an ample quantity. In a state of nature he herds with his fellows, and they may be seen in droves consisting of several hundreds; the animals are quite inoffensive, and form a most animated and interesting picture, their fine forms thrown into a variety of graceful attitudes, rearing, curvetting, or engaging in the race. Byron thus beautifully describes the manners of a herd of wild horses:—

"They stop—they start—they snuff the air,
Gallop a moment here and there,
Approach, retire, wheel round and round,
Then plunging back with sudden bound,
Headed by one black mighty steed,
Who seemed the patriarch of his breed,
Without a single speck or hair
Of white upon his shaggy hide;
They snort—they foam—neigh—swerve aside,
And backward to the forest fly,
By instinct, from a human eye."

The most numerous herds are at present found on the extensive plains of South America, where, when an additional horse is required, it is taken by the lasso, a strong plaited thong, about forty feet in length, which the *guachos* cast dexterously round the frightened animal, when in full career; the sudden jerk throws him to the ground, and once in the power of man, he is soon made to submit to his will, and to devote his strength to the docile fulfilment of his wishes.

"It has been well observed, that had not custom dignified the lion with the title of 'king of beasts,' reason could nowhere confer that honour more deservedly than on the horse. His courage, strength, and fleetness, his symmetrical form, and grandeur of deportment, are unalloyed by any quality injurious to other creatures, or calculated to create

the aversion of man; whose orders he implicitly obeys, whose severest tasks he undertakes with a cheerful alacrity, and whose pleasures he contributes to with animation and delight*."

It is unnecessary to enter into a description of the many varieties of this beautiful and useful animal; most civilized countries possess a peculiar breed. The Arabian, the Andalusian, the French, and English horses, each have their peculiar qualifications. Thus the Spanish genetie is small, but beautifully formed, moving with great ease and grace. The Andalusian is docile and courageous, and possessing many other estimable and useful qualities. The Flemish horses are noted for size and strength; while the English hunter and race-horse are believed to be unrivalled.

"What region the horse originally inhabited, or to what nation we are indebted for his first subjugation, are questions far too remote for history to resolve. That this animal is of eastern origin, and that the Egyptians were the first to reduce it to obedience, and train it to the various purposes of civilized life, appears highly probable from various passages in the Bible, though no direct testimony of such a fact is to be gathered from that source. Representations of

* Maunder's Treasury.

horses appear on Egyptian monuments more than four thousand years old; and also on still more ancient sculptures on the banks of the Euphrates. The first mention of the horse occurs during the wise administration of Joseph in Egypt, who, we are told, gave the famishing inhabitants bread 'in exchange for horses,' and also when the body of the patriarch Jacob was removed from Egypt to Canaan for burial, we read that 'there went up with him both chariots and horsemen.' The period when the horse is thus indicated as a beast both of draught and of burden, is 1650 years before the birth of Christ, which is a date anterior to any that profane history affords on the subject*."

In the 11th chapter of Joshua, the first mention is made of horses, unconnected with Egypt, and then it is in countries to the north of Palestine; it is curious that no mention is made of the animal, during the period when the Israelites were wandering on the confines of Arabia, which is considered by some naturalists as its native country. Camels, asses, oxen, and sheep are all named as existing in considerable numbers; but even at a much later time, as recorded in the book of Judges, ch. vi., when the Arabians

* Maunder's Treasury.

made annual incursions into Palestine, and "their camels were past numbering," the horse is still unmentioned, and even their kings rode on camels. "And Gideon arose and slew Zeba and Zalmunna" (kings of Midian), "and took away the ornaments that were on their *camels'* necks," Judges viii. In the reign of Saul, too, when the tribes beyond Jordan made war upon four Arabian tribes, they found 50,000 camels, 250,000 sheep, 2000 asses, and 100,000 slaves; but still there is no mention of horses, and indeed, in the whole of Scripture history they are never named in connection with Arabia. Strabo also describes that country as destitute of these animals, which accounts for the fact that Solomon obtained his horses from Egypt, and also for the prohibition in Deuteronomy xvii., "He shall not multiply horses to himself, nor cause the people to return to *Egypt* to the end that he shall multiply horses." "It is not difficult to discover the reasons of this prohibition, namely, the danger attending an intercourse with Egypt, to the religious principles of the people, and also that the possession of cavalry might pave the way to those foreign conquests, from which Moses designed to keep them back; Palestine, being mountainous, was better defended by infantry. David first violated this command by reserving horses sufficient

for a hundred chariots, after his victory over Hadadezer, king of Syria (2 Sam. viii.); and Solomon multiplied horses, till he had 'one thousand and four hundred chariots and twelve thousand horsemen,' 1 Kings x.

"The ancient Persians, who were worshippers of the sun, dedicated to their deity white horses and chariots, which were used in the sacred processions, and other nations probably borrowed the practice from that nation. Whether so or not, we find the same idea of associating a chariot and horses with the sun, to denote the rapidity of his apparent progress, common in the poetry and sculpture of classical antiquity. The sun was supposed to be drawn daily in a chariot by four wondrous coursers, through the firmament; and we all recollect the fate of the ambitious Phaëton, who aspired to guide the swift chariot and control the strong coursers of the sun. The names of these coursers are preserved, Eous, Pyrois, Æthon, and Phlegon, which are supposed to refer to the four divisions of the day*." The consequences of Phaëton's ambition were, that he had no sooner taken the reins, than the celestial horses turned out of the right path, and set everything on fire. The Ethiopians were blackened, it is said, by the near approach of the luminary, and the

* Pictorial Bible.

charioteer was destroyed by the thunderbolts of Jupiter. The god of the sun was called Phaëton, or the enlightener. Horses were anciently sacrificed to the sun in different nations, as their swiftness was supposed to render them an appropriate offering. There is an allusion to the dedication or sacrifice of horses to the sun, in 2 Kings xxiii., when Josiah "took away the horses that the kings of Judah had given to the sun, and burned the chariots of the sun with fire."

It appears that Solomon established a very profitable trade in horses with Egypt, disposing of them to the Syrian and Phœnician kings, who could not obtain these valuable animals without their passing through Palestine, as the passage by sea is always expensive and dangerous; he therefore monopolized the trade, as is apparent from the following account: "And Solomon had horses brought out of Egypt, and linen yarn; the king's merchants received the linen yarn at a price. And they fetched up and brought forth out of Egypt a chariot for six hundred shekels of silver, and a horse for an hundred and fifty; and so brought they out horses for all the kings of the Hittites, and for the kings of Syria, by their means" (2 Chron. i.). The value of a horse, by this computation,

was from £17. 2s. to £18. 15s., and the chariots from £68. 9s. to £75.

In the 39th chapter of Job we find the following magnificent and unrivalled description of the horse :—" Hast thou given the horse strength? Hast thou clothed his neck with thunder? Canst thou make him afraid as a grasshopper? The glory of his nostrils is terrible. He paweth in the valley, and rejoiceth in his strength: he goeth on to meet the armed men. He mocketh at fear and is not affrighted; neither turneth he back from the sword. The quiver rattleth against him, the glittering spear and the shield. He swalloweth the ground with fierceness and rage, neither believeth he that it is the sound of the trumpet. He saith among the trumpets, Ha, ha; and he smelleth the battle afar off, the thunder of the captains, and the shouting." This is forcible and beautiful even under the disadvantage of translation, and must be eminently so in the original.

There is a very fine description in Virgil, of which the following is Sotheby's translation:—

"But at the clash of arms, his ear afar
Drinks the deep sound, and vibrates to the war;
Flames from each nostril roll in gather'd stream,
His quivering limbs with restless motion gleam:

O'er his right shoulder, floating full and fair,
Sweeps his thick mane, and spreads his pomp of hair:
Swift works his double spine; and earth around
Rings to the solid hoof that wears the ground."

Antar, the Arabian prince and poet, whose verses, embroidered with gold on silk, were hung up at the door of the Caaba, has also celebrated the praises of this noble animal; and indeed the Arabians have exhausted the stores of their fine language, in describing its beauty, strength, and spirit. For example: "Shedad's mare was called Jirwet, whose like was unknown. Kings negotiated with him for her, but he would not part with her, and would accept no offer or bribe for her; and thus he used to talk of her in his verses: 'Seek not to purchase my horse, for Jirwet is not to be bought nor borrowed. I am a strong castle on her back; and in her bound are glory and greatness. I would not part with her, were strings of camels to come to me, with their drivers following them. She flies with the wind without wings, and tears up the waste and the desert. I will keep her for the day of calamities, and she will rescue me when the battle-dust rises.' And again, at a great feast, where the conversation turned upon celebrated horses, one said of Dahis, 'He startles every one that looks at him; he is the

antidote of grief to every one that beholds him ; and he is a strong tower to every one that mounts him*.’”

The ancients did not shoe their horses by nailing iron plates to the hoofs ; they had shoes of leather, gold, or silver, but enclosing the whole hoof, being tied or bound on, and probably only used on particular occasions. “Hence the hardness of the hoof was a very important consideration, and Xenophon lays much stress on this point, observing, that the good hoof is hard, hollow, and when struck on the ground sounds like a cymbal. The necessity for such hard hoofs in war-horses did not escape Homer, who continually applies to them the epithet ‘brazen-hoofed†.’”

White horses were formerly used in celebrating a triumph in token of victory. It was also considered a happy omen to see one, either in reality or in a dream. This is alluded to in the book of Revelation, ch. vi., “And I saw, and behold a *white* horse ; and he that sat on him had a bow ; and a crown was given unto him : and he went forth conquering and to conquer.”

In Zechariah, ch. xiv., is an allusion to horses’ bells : “In that day shall there be upon the bells of the horses, HOLINESS UNTO THE LORD.” The inscription is of course a figu-

* Pictorial Bible.

† Ibid.





Camel.
Genesis 12. 16.

Wild Ass.
Job 30. 1.

rative expression, denoting that even the meanest things were consecrated to the Lord; and with regard to the bells, it seems that they are still used in western Asia, both on the camels and horses employed in the caravans, the constant jingling forming a characteristic feature in an oriental journey. This is the only purpose for which the orientals use bells; they are about the size of our common house-bells, and usually each animal has only one, though sometimes the leader is ornamented with several, which are hung on the neck.

ASINUS.—The Ass. (Plate V. *Asinus Hemionus*, the Wild Ass.)

The generic distinctions between this well-known but frequently ill-used animal, and the horse, are but trifling: they consist in the greater length of the ears; the tuft at the end of the tail, which has only very short hair the greater part of its length; a distinct dorsal line; warts confined to the fore legs; and the narrowness of the hoof, which is better adapted for walking on hard surfaces than that of its more valued relative. The domestic ass is supposed to be descended from the wild ass, *Asinus Hemionus*, called *Para* in the Scriptures, and thus mentioned in Job xxxix.: "Who hath sent out the wild ass free, or who hath

loosed the bands of the wild ass?" It inhabits the mountainous deserts of Central Asia, and is still found there in considerable numbers; it is of a silver-grey colour, with dark mane and tail, and a broad brown stripe down the back; the ears are rather shorter than those of the domestic race, the legs more slender, and the general appearance much more symmetrical. The pasture of the wild ass being on the margin of the sandy deserts, where the temperature is warm and dry, it is easy to understand the reason the animal is much superior in Syria, Egypt, Barbary, and the south of Europe, to the degenerate specimens in England. Climate has probably had great influence in deteriorating the species, and this deterioration has induced neglect, which tends still more to lower this patient, useful animal in the scale of creation. That the ass must have been a spirited animal in Syria may be inferred from various passages of Scripture, and also from Xenophon, who, in describing the march of the younger Cyrus through Syria, says, "They then proceeded through Arabia (or, rather, Mesopotamia), still keeping the Euphrates on their right hand. This country appeared to the eye a complete flat, and as smooth as the sea. Of wild creatures the most numerous were *wild asses*, which, being *swifter of foot than*

our horses, would, on gaining ground upon them, stand still and look round, and when their pursuers got nearly up to them, they would start off and repeat the same trick. The flesh of the wild ass taken in the chase was found to be like that of the red deer, but more tender." In Persia the wild ass was prized above all other animals as an object of chase, not only from its fleetness, but from the delicacy of its flesh, which made it a luxury even at the royal table. Many texts might be cited to prove the opinion held by the ancients with regard to its strength and spirit. "A wild ass, used to the wilderness, that snuffeth up the wind at her pleasure, in her occasion who can turn her away?" Jeremiah ii. ; and again in ch. xiv., "And the wild asses did stand in the high places, they snuffed up the wind like dragons."

In warm climates, the ass, though not very fleet, is often chosen for long journeys, as being less easily tired out, and needing less refreshment than the horse ; but in the colder climates of the north it is in general use only for inferior purposes, and being hardy, healthy, and temperate in its food, is often a most valuable assistant to the poor, who would be amply rewarded for increased care and kindness by a corresponding increase in spirit and docility. Still the

effects of climate would be felt, and "it is probable that the diminished size, and increased length and shagginess of the hair, which are seen in this and other species of mammalia, when made to reside in countries much colder than those which are natural to them, are connected with each other; and that that portion of the substance and action of the animal which, in the cold climate, goes to the production of the additional covering, would, in a more genial climate, go to increase the size and flesh of the animal*."

There is a peculiarity in the ass which distinguishes it greatly from most domesticated animals, which is its inaptitude for breaking into varieties, even those of colour. Of the horse there are innumerable varieties, not merely of colour, but of size, shape, and spirit, for not only has each country its peculiar horse, but there are different kinds adapted to almost every employment, so that the horse appears particularly pliable to circumstances, whether of climate or treatment. Many other domesticated animals (the ox, for instance) are the same, but the ass shows no such variations: there are trifling changes in colour, or rather in shades of colour, but nothing more. "Plastic animals, which break into varieties adapted to different climates and

* British Cyclopædia.

modes of treatment, may be improved by culture, so that the domesticated shall, in the qualities which are desired, be much better than the wild ; but those which, like the ass, are not so plastic, cannot be improved or even kept up to their natural state if domesticated. For this reason the domestic ass is, in all countries, inferior to the wild one ; and though the differences between those of warm and cold climates be very considerable, they are only indications of different degrees of deterioration*.”

The first mention of this animal in the Bible occurs in Genesis xii. 16 : “And Pharaoh entreated Abram well for her sake ; and he had sheep, and oxen, and *he-asses*, and men-servants, and maid-servants, and *she-asses*, and camels.” The difficulty that has been started by some commentators on this passage is so well explained in the ‘Pictorial Bible’ that I shall copy it for the benefit of my readers. “When we find original terms so unlike each other as *chamor* and *athon*, ‘he-ass’ and ‘she-ass,’ we are apt to think that a different animal must have been meant by *athon*, such as the zebra, for example. A species of *Equus* so strong, so fleet and beautiful, in a state of domestication, would always have merited a distinct allusion, as we see it was customary

* British Cyclopædia.

to make to the 'she-ass.' But the natural fierceness of the zebra renders it, with a few exceptions, almost incapable of a regular training. But in that memorable passage from the 9th chapter of Zechariah we have 'an *ass*, the foal of a *she-ass*,' where the terms *chamor* and *athon* occur in the relation of mother and son: this passage shuts the door against all further conjecture, by showing that our translators have properly rendered the words; besides, in the Arabic, we find the words *athen* or *aten* given to the ass in general."

The ass, as well as the horse, was interdicted as food by Moses, from the fact of their both possessing undivided hoofs; but during the siege of Samaria by Benhadad, king of Syria, so fearful a famine raged in the city that "an ass's head was sold for fourscore pieces of silver." Some writers have attempted to prove that the corn measure, *homer*, is intended, and not the ass, *hamer*; but, as the arguments are not very tenable, this brief allusion will be deemed sufficient. The price was nearly equal to ten pounds of our money, showing forcibly the melancholy situation of the besieged town.

The passage in the 5th chapter of Judges, "Speak ye that ride on *white asses*, ye that sit in judgment, and walk

by the way," has been rather a puzzling one to commentators, some supposing that the whiteness referred to the animals, others to the trappings with which they were decorated. But in reality there is little or no difficulty, for perfectly white asses are not uncommon in western Asia, and as they are generally the finest specimens of their kind, and very handsome, they are held in great esteem, and sell at a high price. When let out on hire, too, they are always more ornamented, their trappings are of gayer colours, the beads and shells more abundant, and the metal ornaments more bright; they are also frequently painted, in spots and streaks, with the red stains of the henna-plant. If the Hebrews had the same preference for these white asses as the modern Asiatics, it may be readily understood that a kind of distinction was conferred on their riders where horses were not employed.

The number of asses and other animals mentioned as belonging to different patriarchs, astonish the reader, but the property in cattle possessed by Arabian Emirs of the present day, bear no undue proportion to patriarchal wealth. Ezra mentions two hundred and forty-five mules*, and six

* Mules were much used for riding by kings and persons of distinction at various periods of Jewish history. The first positive mention of these

thousand seven hundred and twenty asses; but these belonged to more than one person. In his wars with the Midianites, Joshua is said to have taken "threescore and one thousand asses." Job possessed five hundred she-asses before his misfortunes, and twice that number after his restoration to prosperity. These, with his "seven thousand sheep, and three thousand camels, and five hundred yoke of oxen," might well entitle Job to be called "the greatest of all the men of the East;" and the whole of this description of pastoral life bears a great resemblance to that of an Arabian Emir in the present day, though the riches of Job greatly surpassed those of a modern Arabian prince. In the time of the prophet Zechariah we find horses had become common amongst the Jews, for it was then considered a mark of humility to ride on an ass, as is intimated by the prophecy, afterwards fulfilled by Christ when entering Jerusalem: "Rejoice greatly, O daughter of Sion; shout, O daughter of Jerusalem: behold thy king cometh unto thee: he is just, and having salvation, lowly, and riding upon an ass, and upon a colt, the foal of an ass." Thus, animals is in 2 Samuel xiii.: "Then all the king's sons arose, and every man gat him upon his *mule* and fled." And when Solomon was anointed king during his father's life-time, he was mounted on the king's own mule: "Cause Solomon, my son, to ride upon mine own *mule*."

the same ideas were then established as are now entertained in the East concerning the relative dignity of the two animals. The ass is by no means despised, but much consequence is attached to riding on horseback, and persons even of moderate means will submit to great discomfort rather than give up the possession of one or more horses; hence it is considered a mark of humility and lowliness to use the humbler animal. In Matthew xxi. is recorded the literal fulfilment of the foregoing prophecy:—"Then sent Jesus two disciples, saying unto them, Go into the village over against you, and straightway ye shall find an ass tied, and a colt with her; loose them, and bring them to me. And if any man say aught unto you, ye shall say, The Lord hath need of them; and straightway he will send them. All this was done, that it might be fulfilled which was spoken by the prophet, saying, Tell ye the daughter of Sion, Behold, thy king cometh unto thee, meek, and sitting upon an ass, and a colt, the foal of an ass. And the disciples went, and did as Jesus commanded them. And brought the ass, and the colt, and put on them their clothes, and they set him thereon." The passage here cited led the Jews to expect that the Messiah would come riding upon an ass; and they reconciled this with Daniel's

description of his "coming with the clouds of heaven," by saying that if the Israelites were good he would come with the clouds of heaven, but if not good, riding on an ass*.

It was long thought that there were no representations of this animal on the monuments of Egypt, but some have recently been discovered.

ORDER RUMINANTIA.

CAMELUS.—The Camel. (Plate V.)

This is a genus of the ruminating animals without horns, and possessing three kinds of teeth; the upper lip divided; the neck long and arched; having either one or two protuberances on the back; the foot broad, expanded, and elastic, with two small hoofs or toes, adapting the animal admirably to travelling in the dry, stony region which it principally inhabits. Its native country is said to extend from Mauritania to China.

There are two species, embracing several varieties or races, differing in size, strength, and swiftness; these are *Camelus Bactrianus*, the Camel, and *C. Dromedarius*, the

* Pictorial Bible.

Dromedary. The first-mentioned, having two humps, is found from Turkistan, the ancient Bactria, to China, that is, in the north of the region named; it is larger than the dromedary; the limbs not so long in proportion; the muzzle larger; the hair of a darker brown; and the movement usually slower. The Arabian, or single-humped camel, *C. Dromedarius*, is a native of the southern part of the district; its general height is about six feet and a half to the top of the hump, and to the top of the head, when elevated, rather less than nine; the head, however, is usually carried much lower, as the camel bends its neck considerably.

It is very probable that the camel has long since ceased to exist in a wild state, as it seems to have been subdued by man from the earliest times. Great numbers are raised in the East, and employed in the trade carried on in the vicinity of the great deserts; there the camel is indeed invaluable, for where water is scarce it would be impossible to use any other beasts of burden. The camel can abstain from drinking for several days without injury, owing to the possession of a cavity in the stomach, destined to receive, and retain unchanged, the necessary supply. Besides this reservoir of water for the prevention of thirst, the humps of the camel afford it nutriment when food cannot be

obtained, being composed of fat, which can be absorbed into the system when necessary for the subsistence of the animal.

Endowed with greater strength and activity than most beasts of burthen, docile and contented with the coarsest food, the camel is peculiarly adapted to its station. To the Arabs, and other wanderers of the desert, it affords at once wealth, subsistence, and many comforts and luxuries; its milk furnishes them with nutriment; the flesh of the young animal is one of their greatest delicacies; of the skin they form tents, or make it into saddles, harness, shields, and various other articles; the hair is also valuable. The training of the young camel begins when it is only a few days old, its little limbs being folded under the body, and it is compelled to remain in this position whilst loaded with a weight which is increased as the animal gains strength. A strong camel will carry from eight hundred to a thousand pounds weight, from thirty to thirty-five miles a day; and those which are used only for speed, will travel from sixty to ninety miles. They prefer nettles, thistles, cassia, and other prickly plants, to the softest herbage.

Camels are first mentioned in the 12th chapter of Genesis, when Abram was travelling through Egypt with his wife

Sarai: they were amongst the gifts which Pharaoh presented to the patriarch. In the 32nd chapter they are again spoken of, as part of the possessions of Jacob, when, returning home from the dwelling of his uncle Laban, he met Esau and endeavoured to propitiate his offended brother with presents. "Thirty milch camels, with their colts" formed a portion of this offering; and a valuable portion, as the female is much prized on account of the milk, which then was, as it is now, an important item in the daily nourishment of Eastern nations. The Arabs drink camels' milk either fresh or sour; they are partial to it in the latter state, and it becomes sour sooner than that of most other animals. Great quantities of camels' milk are also given to the Arabian horses, and the foals are fed almost exclusively on it for some time. Burckhardt says, that when the Bedouins take colts of two or three years old to sell in Syria, they protest, in order to enhance their value, that since they have been weaned they have been fed exclusively on camels' milk.

This animal was prohibited to be used as food by the Jews, "because he cheweth the cud, but divideth not the hoof." Of this latter assertion there is much question, as the foot is in a certain degree divided; that is, the foot is

separated distinctly above, though underneath, the division is limited to the anterior portion of the foot, the toes being confined by the elastic cushion on which the animal treads. This renders the division imperfect; but it seems highly probable that Moses took advantage of the uncertainty, to raise a barrier between his people and the other descendants of Abraham; for the interdiction of the flesh and milk of the camel, would in a great degree wean them from a nomade life, from which it seemed the intention of the great lawgiver entirely to separate the people under his charge. The constant use of the milk is said to bring on disease. The flesh resembles beef, but is coarse-grained, though palatable when young and well-fed.

In 1 Kings iv. the word "dromedary" occurs, but the marginal reading renders the word "mules or swift beasts." In the 2 Kings viii. it is recorded that Benhadad, king of Syria, being sick, sent presents to the prophet Elisha, "forty camels' burden:" this must have been a valuable gift, but it does not follow that every camel was fully laden, it being a common practice in the East, to employ a far greater number of men and animals in conveying a present than is absolutely required. The load of a camel varies much, according to circumstances. Burckhardt says, that "the

common load of an Arabian camel is from four to five hundred pounds on a long journey, and from three to four hundred on a journey of considerable distance. The well-fed and well-watered Egyptian camels are equal in strength to the Anadolian; those of the largest size, in Cairo, will carry three bales of coffee, or fifteen hundredweight, from the town to the waterside, about three miles distant. From Cairo to Suez, the same camels will carry ten hundredweight, and that space is a journey of three days; but the average of a camel's burden may be stated as about six or eight hundred pounds. The male can support heavier loads than the female, but the latter bears thirst better, an important consideration in the East.

The camel and dromedary are not swift animals compared to many others, and though Jeremiah speaks of the "swift dromedary," he must be considered as comparing it with other breeds of the same animal. The favourite pace of camels is a kind of easy amble, and if allowed to persevere in this, they will carry their riders at the rate of five or six miles an hour, through an uninterrupted journey of several days and nights. The best-trained camels cannot continue a gallop for more than half an hour; a forced trot is not so contrary to their nature; but in this pace they do not

exceed twelve miles an hour, which is less expeditious than a moderately good horse.

That camels were common and much used in ancient times, may be gathered from various passages of Scripture. Job is said to have possessed at one time three, and at another six thousand of these animals: the average price in western Asia is about ten pounds; so that, allowing for the difference in the value of money, camels formed an important item in the property of the patriarch, and were well worth the long journey taken by the Chaldæans to secure the prize; probably the animals had been sent into the desert pastures near the Euphrates, which exposed them more to hostile attacks*.

The last example we shall notice is that, where Jesus makes use of the proverbial Eastern expression in cases of difficulty, "It is easier for a camel to go through the eye of a needle." Lightfoot and others have shown, that to speak of a camel or other large animal, as an elephant, going through the eye of a needle, was a proverbial expression, much used to denote a thing very unusual or very difficult. Thus, the authors of an edition of the book of Zohar express the arduous nature of their undertaking, by saying,

* Pictorial Bible.

“In the name of our God we have seen fit to bring an elephant through the eye of a needle.” The Koran has this expression, “Until the camel shall enter the needle’s eye.” These illustrations are important, to fix the true force and meaning of the expression; and they show the error of several Greek transcribers (followed by some translators), who, not understanding the expression as it stood, took the liberty of supposing it a mistake, and therefore substituted “a cable” for “a camel,” producing the reading “It is easier for a cable to go through the eye of a needle, than for a rich man to enter into the kingdom of God.”

In many places of Scripture where the dromedary is mentioned, it is supposed that a finer breed of camel is meant,—one used principally for riding, and bearing the same relation to the common camel in the East, that a race-horse and hunter bear to a coach-horse or pack-horse in England.

ANTILOPE.—The Antelope. (Plate VIII. *Antelope Arabica*, the Arabian Antelope.)

The species of this beautiful genus are so numerous, and differ so much from each other, that it is difficult to give a description equally applicable to all. It may, however, be

said that they are generally of a graceful and symmetrical form, remarkable for their swiftness and agility, and of a restless and timid disposition: their horns, though of many different forms, are all round and annulated, in some species straight, in others curved or spiral; in some the females have no horns, in others these appendages are found in both sexes. They all possess an acute sense of smell, their eyes are remarkably bright, and their fleetness is proverbial. The hair is generally short and smooth, but some species are furnished with manes on the neck and shoulders; the ears are long and pointed; the tail short and tufted at the end.

Antelopes are generally gregarious: in some species the herds amount to two or three thousand, while others live in pairs, or in companies of five or six. These animals appear to be a connecting link between the goat and deer: like the former, they do not shed their horns, but in size, delicacy of form, colour of the hair, and fleetness, they bear a striking resemblance to the latter. They principally inhabit the torrid zone, frequenting cliffs and rocky situations, or traversing vast wildernesses: many species are found in Asia, still more in Africa, but only one in Europe, the alpine chamois, and not a single species of the true ante-

lope has been discovered in America, the so-called prong-horned antelope of North America (*Antilocapra furcifera*) being nearly allied to the goat.

The Gazelle (*Antilope Dorcas*) is a rather small but very beautiful species; the specific name signifies "bright-eyed," and in Arab poetry the eye of the gazelle is the standard of beauty. This beautiful animal is about two feet high; the head and neck finely formed; the eyes large, dark, and expressive; the hair on the back is of a delicate fawn-colour, with a brown band on the sides, the under part is white; the horns are ornamented by twelve or fourteen rings, and diverge like the horns of an ancient lyre, in the female they are smaller; the nose is streaked with dark brown, and there is a white line extending from each horn over the eye, and down the side of the face. This elegant creature is supposed to be alluded to, as the roebuck, in Deuteronomy xii. and 1 Kings iv.; as the wild roe, in 2 Samuel ii., and again in the Song of Solomon. It is very common in northern Africa and western Asia, and it was an important advantage to the Israelites, that its use as food was not interdicted to them.

Professor Paxton says, "The lofty mountains of Syria, Amana, Lebanon, and Carmel, swarmed with these animals,

which, descending into the plains to graze on the cultivated fields, invited the Israelites to the healthful exercise of the chase, and supplied their tables with a species of food equally abundant and agreeable."

In Proverbs the gazelle is mentioned as the "pleasant roe;" and it is interesting to observe that, "whenever in Scripture a comparison drawn from it is applied to man, it is with reference to its agility and speed, but when to woman the comparison regards its graceful form, timidity, and gentleness. This is precisely the same among the modern orientals, with whom in fact the gazelle and the monkey represent the extremes of beauty and ugliness." The Arabs express a woman's beauty by saying she has the eyes of a gazelle; the burden of their love-songs is the gazelle's eyes, and it is to this creature they invariably compare their mistresses, when they wish to give in one word the idea of perfect beauty. These gazelles are indeed very pretty creatures, and there is a certain innocent fear about them that may well be compared to the modesty and bashfulness of a young girl*."

The *hart* and *hind*, which are so often named in the different books of Scripture, were probably general names for

* Pictorial Bible.

all animals of the antelope kind. Thus, in Psalm xlii., "As the hart panteth after the water-brooks, so panteth my soul after thee, O God," the royal Psalmist in all probability did not intend to refer to any particular species, but spoke of the well-known habit of the whole genus, as the hart is naturally of a hot nature, suffering much from thirst in oriental regions, and therefore seeking the fountain with the most intense desire. "The hart or hind was an emblem of double signification. It was a type of solitude, and of purity of life, and was also a type of piety and religious aspiration, adopted from the forty-second Psalm, 'Like as the hart panteth after the water-brooks, so panteth my soul after thee, O God*.'"

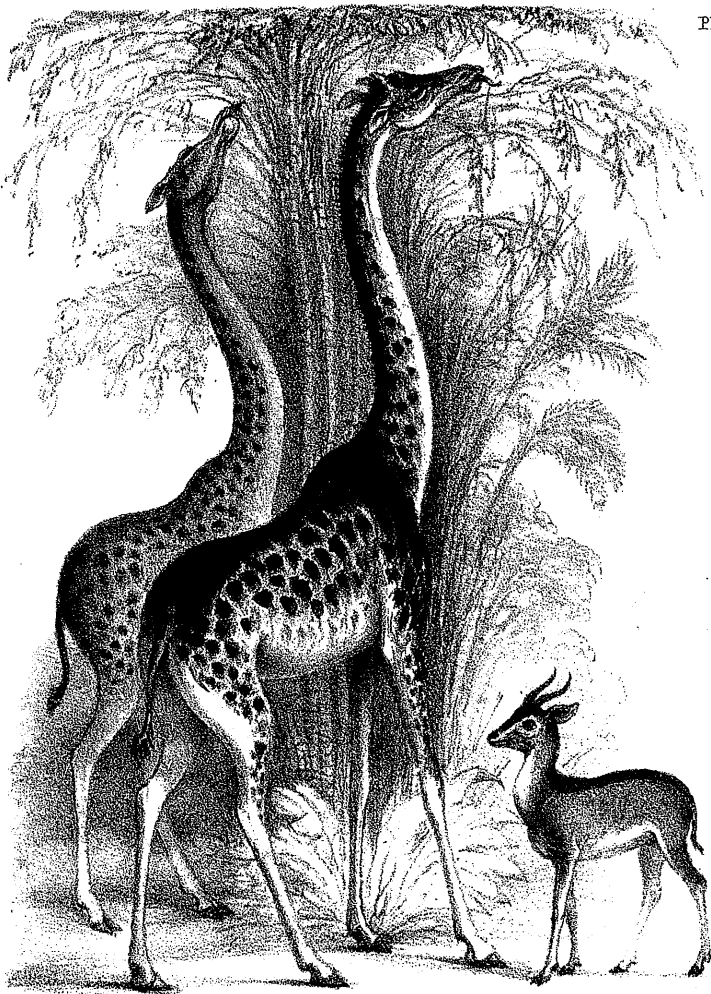
The gazelle of the Levant (*Antilope Arabica*) is distinguished from *A. Dorcas* by a still more elegant form, and by its darker colour, and probably, as one of the common species of the country, frequently gave rise to the beautiful comparisons so abundant in Hebrew poetry.

The Fallow Deer (*Antilope Dama*), so well known as an ornament to our parks, was originally a native of Barbary. It is smaller than the stag, of a dark-brown colour in winter, but in the summer, bay, spotted with white; the legs are

* Mrs. Jameson's 'Legendary Art.'

long; the neck arched; the horns are flattened and toothed behind, whence it is called by the ancients *platyceros*, the flat-horned deer. This species is mentioned in 1 Kings iv., in speaking of Solomon's provisions for one day, in connection with roebucks and harts, *A. Dorcas* and probably *A. Arabica*.

Antelope Gazella (Plate VI. the "Wild Ox," or Oryx).—The Septuagint supposes this to be the animal intended by the "wild ox" of Deuteronomy xiv. "It is distinguished by the length and straightness of the horns, a circumstance which seems to be pointed at in the etymology of the Greek name." It is a native of northern Africa, about five feet in length, and little more than three feet in height at the shoulder; the horns are nearly straight, and often more than two feet long, black and slightly annulated: the animal uses them like spears, and will even dart upon the lion before he can make his fatal spring. The colour of the animal is reddish-grey, and white beneath, with bands of black extending from the head, down the throat to the fore legs, which they encircle, then passing along the sides the hind legs are ornamented by them in the same manner. The hunting of the "wild ox" is said to be dangerous, for when wounded, it will turn upon the hunters with great



Giraffe.
Deuteronomy 14.13.

Gazelle
Psalm 42.1.



boldness, and the sharp horns are formidable weapons. This animal is often represented on the monuments of Nubia and Egypt.

The "pygarg" mentioned in the 14th chapter of Deuteronomy, and there only, is generally supposed to be a species of antelope, though the marginal reading renders it "bison," for which, however, there seems to be no other authority than the similarity of the name to that of the original, "*dishon*." Several old authors mention an animal called *pygargus*: Herodotus names it in a list of Libyan quadrupeds, Pliny, as a kind of antelope, and Ælian, as a quadruped of timid character. The Greek name seems to denote an animal having its hinder parts white; and Bochart finds a great affinity between the African *lidmee*, or the *strepsicorus* and *addace* of the ancients, and the "*dishon*," which our translators render "*pygarg*" after the Septuagint and Vulgate. He says that the *lidmee* has the white hinder parts which the name pygarg requires, and that *addace* has some resemblance to the Hebrew name.

CAMELOPARDALIS GIRAFFA.—The Camelopard. (Plate VIII.)

The *Zemer*, translated *chamois* in the 14th chapter of Deuteronomy, is very generally supposed to mean the giraffe,

or camelopard, as the chamois is not met with so far south as Egypt and Palestine, and the Jews had probably many opportunities of becoming acquainted with the giraffe while in Egypt, as had also the writers of the Septuagint version, for they resided also in that country.

This remarkable animal, which in general structure is very nearly allied to the deer tribe, has also points of resemblance with the antelope and camel. "If height alone constituted precedency among quadrupeds, the giraffe, as Le Vaillant justly observes, must hold the first rank. The enormous apparent length of the fore legs, and its long tapering neck, must strike every one at the first glance; while its small and elevated head, its large and brilliant eye, its mild aspect, and the whole *contour* of the animal, differing from all others, cannot fail to excite admiration; for notwithstanding the unusual proportions of the limbs, its general form is not merely elegant, but highly picturesque*."

The giraffe measures from fourteen to seventeen feet to the top of the head, the females being smaller; at first sight the fore legs appear nearly twice the length of the hind, but this arises from the great height of the shoulders; the tail

* Maunder's Treasury.

is of moderate length, tapering towards the end, and terminating in a tuft of long hair; the horns differ much in form and texture from those of other animals, consisting of a porous bony substance; they are about three inches long, and are placed just above the ears, a protuberance also rises on the middle of the forehead, between the eyes; the neck has a short stiff mane. The colour of the giraffe is a light fawn, with numerous large dark spots, less regularly placed on the sides, than on the neck and shoulders.

The giraffe is destined to feed on the foliage and young shoots of trees, at a far greater height than any other animal can reach; and for this purpose it is provided, in addition to its long neck, with an elongated prehensile tongue, with which it lays hold of young and tender branches, and draws them into its mouth; when bending its head to the ground, which is rarely done except for the purpose of drinking, the giraffe is obliged to stretch its fore legs widely apart, and then bend its neck in a semicircular form. When attacked, the giraffe defends itself by striking powerfully with its feet, and even the lion is often successfully repulsed; the horns too, short as they are, form by no means insignificant weapons: the female at the Zoological Gardens once, in sport, drove her horns through an inch board.

Their pace is extremely rapid, but cannot be maintained for a long period.

Two varieties of this singular animal are known, one a native of Nubia, Abyssinia, and the neighbouring districts, the other found in South Africa. The giraffe is frequently figured on Egyptian monuments as a beast of chase, and was, therefore, probably familiar in some degree to the Hebrews.

CAPRA.—The Goat. (Plate VII. *Capra Mambrica*, and *C. Iber.*)

The distinguishing characters of the genus *Capra* are, that the horns are hollow, turned upwards, and with the surface annulated; there are eight cutting teeth in the lower jaw, and none in the upper; the male generally has a beard. Buffon says, "The goat is superior to the sheep, both in sentiment and dexterity. He approaches man spontaneously, and is easily familiarized. He is sensible of caresses, and capable of a considerable degree of attachment. He is stronger, lighter, more agile, and less timid than the sheep; he is a sprightly, capricious, and wandering animal; it is with much difficulty that he can be confined, and he loves to retire into solitude, and to climb, stand, and even sleep on rugged and lofty eminences. He is robust and easily nourished, eating almost every herb, and injured by very few."



Wild Goats.

Deuteronomy, 14. 5. 1st Samuel, 24. 20.

The original stock of the common goat (*Capra Hircus*) like that of other animals early domesticated by man, cannot be distinctly traced; Mr. Bell, in his 'History of British Quadrupeds,' says, "Most modern zoologists have leaned to the belief that the *Ægagrus*, or wild goat of the mountains of Caucasus and of Persia, is the true original stock, and it is worthy of remark, that the horns of the Persian domestic goat, though smaller, are similar in form to those of the *Ægagrus*."

"The condition of the goat in some parts of our own islands," says the same writer, "is much more wild than that of any other of our domestic animals. In the mountains of Wales especially, the wild goat roams over the most inaccessible parts of the mountains and rocks, without the slightest appearance of domestication; it is a hardy, active, and powerful animal, capable of maintaining its footing on the smallest point on which its feet can possibly rest, and of taking considerable leaps, with the utmost certainty of alighting safely, although the spot which it desires to attain be perhaps but the rugged point or ledge of a precipice. In the mountain ranges of Europe, on the Alps and Pyrenees, the goat is found at a great elevation, approaching as near the line of perpetual snow as it can find the scanty means

of subsistence, and it feeds on many plants which to other ruminants are distasteful and even deleterious; thus hemlock, henbane, and *Digitalis* are eaten by it with impunity, and even the acrid *Euphorbia* is not rejected."

The milk of the goat is very sweet and nutritious. Formerly the skin was considered a most useful article of clothing, and it is still manufactured into Turkey and Morocco leather; that of the kid forms the softest and most suitable material for gloves and other articles. The usual colour of the domestic goat is black and white, or a pale reddish-brown.

The common goat inhabits most parts of the world, and will endure all climates, from Norway to the hottest parts of Africa and India. The Cashmere goat produces a fine wool close to the skin, which is made into the celebrated and costly shawls for which the Asiatics have so long been famous; and from the hair of the Angora goat the finest camlets are manufactured. A race found in Upper Egypt has the hair very short, the forehead very round, and the lower jaw projecting beyond the upper; those of Guinea are very small, and have the horns turned back. The Syrian goat, of which there are several varieties, is remarkable for the great length of its ears, which are said in some cases to

touch the ground when the animal is feeding. These animals are mentioned very early in Scripture—in the 15th chapter of Genesis, and again in Exodus xxvi., where we find their hair was used for making the curtains of the tabernacle: “Thou shalt make curtains of goats’ hair, to be a covering upon the tabernacle, eleven curtains shalt thou make.” Cloth made of goats’ hair forms the usual covering for the tents of the Bedouin Arabs to this day, and it still continues to be spun and wove at home by the women.

The “wild goat,” *akko* of Deuteronomy xiv., is considered to refer to the *Capra Ibez* (Plate VII.). This creature is remarkable for its sweeping pair of horns, and an additional coat of long shaggy hair, which forms its winter suit. Like the goat, of which it is a species, it frequents the highest ridges of the mountainous regions throughout Europe and Asia, especially in the western parts of the latter. The horns sometimes measure more than four feet in length, and are knotted in a series of elevated rings. Its colour is greyish-yellow above, a dull white below, with a black stripe on the ridge of the back, and a brown band along the flanks*.

“In 1 Samuel xxiv., Saul is said to ‘seek David and

* Pictorial Bible.

his men upon the rocks of the *wild goats*.' The original word is *yeailim*, and probably some animal of the goat kind is intended, but of course no species can be identified. The name is derived from the verb *alah*, which signifies to ascend or mount up; and which expressively refers to the distinguishing characteristic in the habits of these animals, which impels them to leave the valleys and the plains, to ascend the rocks, and rejoice upon the mountains*."

It seems probable that the *Capra Mambrica* (Plate VII.), which, with some variations, is common to Egypt, Syria, and other parts of the East, is the animal here and elsewhere alluded to, and it is not unlikely that it derives its specific name from the mountains of Mamre, for it was among these mountains that this "rock of the wild goats" occurred. The *Capra Mambrica* is chiefly distinguished by its long and pendulous ears; horns arching backward, of a brownish-ash colour; the general colour of the hair in the male is greyish-brown, with a dark line along the back, and a black tail; the front of the head blackish, the beard and long hair on the throat are reddish-brown. The female is smaller than the male, and paler in colour.

The goat is frequently alluded to in the various books of

* Pictorial Bible.

Scripture, and, indeed, "under the Jewish rituals the goat was an important animal, and used as the appropriate symbol of atonement in the splendid rites ordained by the Supreme Lawgiver himself*." Both the sheep and goat make an important figure in the mythology of ancient nations. Pan, the god of shepherds, had the attributes of a goat; the Libyan Jupiter was distinguished by having the horns of a ram; the *Ægis*, or shield of Minerva and of Jupiter, was originally a goat-skin; the goat was thus connected with supreme power and wisdom in the persons of these divinities, which shows the estimation in which the character of the animal was held. The skin of the goat seems to have been very early used for clothing, and a kind of felt made from the hair, stiffened with gum, was proof both against the weather and the weapons of an enemy. "The war-tunics of the Cimbri, which, in their wars with Marius, are represented as being such strong defences, were of this material; and the Roman auxiliaries had winter dresses of the same in Britain and all the other colder provinces of the empire. We have evidence of the early domestication of the goat in the fact that all the Celtic tribes, which are justly regarded as the most ancient races

* British Cyclopædia.

of many parts of Europe, bred and cultivated goats long before the introduction of sheep. In the Highlands of Scotland and Wales, the goat was the original domestic animal; and in both countries there are many districts called by the name of *Gower*, which is Celtic for goat; and many families have the same surname. All these circumstances render the history of the goat a highly interesting one*."

OVIS.—The Sheep. (Plate IX. Asiatic Sheep.)

The sheep differs so slightly in anatomical structure from the goat, that both are united in one genus by some naturalists. The principal differences consist in the sheep having no beard, and in the horns being directed backward in the first place, and then more or less spirally forward. "It is generally imagined that the primitive stock may be traced to the wild sheep of Sardinia and Corsica, the *moufflon*, or to the *argali* of Asia, though some naturalists suppose these animals to be the descendants of those that have escaped the dominion of man; however this may be, it is certain that the coat of these wild sheep possesses the essential character of wool, though consisting of coarse and long hair; that is, from its peculiar scaly surface, it is capable

* British Cyclopædia.



Asiatic Sheep.
Genesis 4. 2.



of being felted. "Cloth and woollen goods are made from wool possessing this property; the wool is carded, spun, and woven, and then being put into the fulling-mill, the process of felting takes place; the strokes of the mill make the fibres cohere, the piece subjected to the operation contracts in length and breadth, and its texture becomes more compact and uniform. This process is essential to the beauty and strength of woollen cloth, but the long wool, of which stuffs and worsted goods are made, is deprived of its felting properties. This is done by passing the wool through heated iron combs, which takes away the laminæ, or feathery part of the wool, and approximates it to the nature of silk or cotton*."

Sheep are amongst the most useful of our domestic animals: they supply us with nourishing food, furnish one of the principal materials for clothing, and the dressed skin is also used for different parts of our apparel, and for covering books; the milk is very thick and rich, and the manure yielded is most profitable to the farmer. "There probably is not a species amongst all our domestic animals," says Mr. Bell, "which, in its historical associations, is so interesting as the sheep. Its early domestication, its em-

* M'Culloch.

ployment as the subject of the first sacrifices, its typical character as an offering of atonement, its importance as forming the principal wealth of the early patriarchs, its various connection, in short, with the political, the religious, and the domestic customs of those primitive magnates of the Jewish nation, are all of them subjects forming ample food for deep and delightful reflection. The relation which existed between the patriarchal shepherds and their flocks was, indeed, of so intimate and even affectionate a nature as to have afforded the subject of many of the most beautiful and touching parables and moral illustrations in the Sacred Writings. It is scarcely necessary to refer to the unequalled appeal of Nathan to David, to the still higher and prophetic allusion to the character of the Messiah, or to the sublime illustration of the beneficence of the 'great Shepherd of Israel,' in the beautiful and well-known pastoral psalm."

The varieties of the sheep are very numerous, even in England; many counties having peculiar breeds noted for their valuable qualities; and the South Down, which take their name from a tract of downs extending through Sussex, Surrey, and Kent, are noted for the peculiar goodness of their flesh: they have black heads and legs.

Of the foreign varieties, the most celebrated are the Many-horned Sheep (*Ovis polycerata*), found in Iceland and the north of Russia, which greatly resembles the domestic sheep in form, but is larger ; the wool is long, smooth, of a hairy nature and a dark brown colour, under which is a fine, short, and soft kind of wool or fur.

The Cretan Sheep (*Ovis strepsicerus*) is found principally in Crete, but is kept in some parts of Europe for the singularity of its appearance, the horns being very large, long, and spiral, those of the male upright, of the female at right angles to the head.

A variety met with in the deserts of Tartary have long legs, horns in the male, black heads, large pendent ears, and the tail so enveloped in fat as to be scarcely visible, the parts on each side swelling out considerably. The broad-tailed sheep (*Ovis laticauda*) is common in Tartary, Arabia, Persia, Syria, and Egypt, and is remarkable for its enormous tail, which often weighs between ten and twenty pounds : the upper part is covered with wool, underneath it is quite bare ; the fat of which it is composed is esteemed a great delicacy.

The African Sheep (*Ovis Guineensis*) is an inhabitant of all tropical countries, both in Africa and the East. It is

large; the skin rough and hairy; the horns short; the ears long and pendent; it has a long mane, reaching below the neck, and a kind of dewlap under the chin.

The Syrian Sheep, with its pendent ears and large tail, must be looked upon as the animal mentioned in the Bible; it is first named in the 4th chapter of Genesis, in speaking of Abel as a "keeper of sheep;" and again, "He brought the firstlings of his flock, and of the *fat* thereof." The fat may refer more particularly to the tail, which is especially alluded to in the law regarding the peace-offering: or "the same word in Hebrew, differently pointed, means milk as well as fat. Josephus expressly says it was milk; and Grotius and others think that milk was part of the offering. Milk used to be offered in sacrifice by the ancient Egyptians*."

Sheep and lambs are constantly mentioned as used in the Jewish sacrifices; and, indeed, we never read of any other animals than oxen, sheep, and goats, among quadrupeds, being devoted to this purpose, thus excluding all animals not used for food, amongst domestic quadrupeds, and all wild beasts. This formed one great distinction between the offerings of the Hebrews and of other ancient

* Pictorial Bible.

nations ; for horses were sacrificed to the sun, hogs to Ceres, dogs to Hecate, and wolves to Mars ; camels also were sacrificed by the Arabians. Fish are never named as offerings at the altar.

The prevalence of this practice in all nations has given rise to much discussion, and various opinions are held as to its origin, but the subject is involved in too much obscurity to be profitably discussed in a work of this nature. Its antiquity is shown in the history of Abel, Noah, and the other Hebrew patriarchs ; its universality, by the records of all ancient nations, and also by reference to existing usages among different people in various parts of the world : thus the laws of Moses on this subject were not by any means singular or peculiar, but only modifications of existing and well-known customs. In Egypt, where the Israelites had so long sojourned, white bulls, without a single black hair, were sacrificed to Apis, and, after minute examination by the priest, were sealed by him, to testify their fitness for the purpose of an offering. The sacrifices of the Hebrews were also commanded to be "without blemish" and "without spot." Abraham offered "a ram of three years old." Aaron also offered a "ram for a burnt-offering." Balak, by command of Balaam, offered "seven bullocks and seven

rams." These and many other passages show that the latter animals were much used for the sacrifices; lambs are also very frequently mentioned, as "seven lambs without blemish of the first year" for a burnt-offering; and "two lambs of the first year for a sacrifice of peace-offerings." Examples might be multiplied, but it is unnecessary. The 29th chapter of Exodus gives ample directions for the ceremonies proper at the sacrifice of both bullocks and rams, and must be familiar to the Biblical student, as well as many others in which particular reference is made to these animals. The Hebrew word *se*, generally translated "lamb," is indifferently used for the young of the sheep or goat.

Sheep were amongst the animals allowed as food to the Hebrews; their skins were also early brought into common use, as "rams' skins dyed red" are mentioned in Exodus xxxv., with other offerings made for the adornment of the tabernacle; and "rams' horns" were used as musical instruments in the time of Joshua (and probably before that period), as "trumpets of rams' horns" were employed at the siege of Jericho, at least according to the Rabbins; though, as this is the only instance in which the word *jobel* denotes a ram, there seems to be some doubt thrown upon

it; they say that it is an Arabic word for ram, though the modern Arabians do not use the word in that sense. That a horn of some kind was intended seems very certain, and that of the ram appears to be as probable as any other. In Exodus xix. the same word is employed to denote the instrument used when the jubilee was proclaimed.

Numerous texts might be cited in proof that the practice of keeping sheep was very prevalent among the Hebrews in the patriarchal ages. A few will suffice. David was a keeper of sheep, as related in 1 Samuel xvi. In Nathan's beautiful parable he relates that "the rich man had exceeding many flocks and herds," the poor man also had his "one little ewe-lamb;" and, though only a fiction, it shows that the custom of keeping sheep was a common one. In 2 Kings iii. it is said that "Mesha, king of Moab, was a sheep-master, and rendered unto the king of Israel an hundred thousand lambs, and an hundred thousand rams, with the wool," which shows that tribute and taxes were paid in this kind of produce, and that even the wealth of kings consisted much in live-stock. This is not by any means peculiar either to the time or country, for even at this period the king of Persia receives part of his tribute in live-stock and raw produce; and that the same custom prevailed

in former times may be gathered from Strabo, who says that the Cappadocians paid an annual tribute to the kings of Persia of 1500 horses, 2000 mules, and 50,000 sheep.

In 1 Chronicles iv. the account of the descendants of Judah ends in the following manner, showing the great importance attached to the possession of good pasturage:—
“These mentioned by their names were princes in their families: and the house of their fathers increased greatly. And they went to the entrance of Gedor, even unto the east side of the valley, to seek pasture for their flocks; and they found fat pasture and good; and the land was wide, and quiet, and peaceable, for they of Ham had dwelt there of old. And these written by name came in the days of Hezekiah, king of Judah, and smote their tents, and the habitations that were found there, and destroyed them utterly unto this day, and dwelt in their room, *because there was pasture* there for their flocks.”

David bestowed particular attention on his flocks and herds; after he became king they were doubtless one great source of his revenue; and we find in 1 Chronicles xxvii. that they were dispersed in various valleys and plains of the kingdom, and also sent to the deserts of the south and east, under the guidance of Arabian pastors; Obil, an

Ishmaelite, being over the camels, and Jaziz, the Hagerite, over the flocks.

With regard to the management of sheep in the East, it will be interesting to trace both the similarity that exists to our own usages, and the points of difference caused by variety of climate and increased civilization. In many parts of the Bible, where the word "sheepfold" is used, "pasture" would be preferable, as the Hebrews did not usually fold their flocks at night; but when in a neighbourhood where they considered themselves and their charge in danger from the attacks of nomades or wild beasts, they drove them either into caves, or, where these were wanting, into enclosures erected for the purpose; and this might be very properly translated "sheepfold" or "sheepcote," as in 2 Samuel vii. and 1 Chronicles xvii. When no danger is feared, the sheep are only folded in the East when collected for the purpose of being shorn. In Solomon's Song is a reference to sheep-washing, so that in this particular the ancient custom was analogous to that of the present day: "Thy teeth are like a flock of sheep that are even shorn, which came up from the washing." In the 10th chapter of John are several beautiful allusions to sheep and shepherds, illustrating many of the pastoral customs of the time,

some of which exist in the present day: in the 3rd verse is the following expression, "He calleth his own sheep by name." "From this it would seem that the Jews, like the Arabians, gave names to their sheep, by which they called them to drink or to be milked. This necessarily implies that the shepherd could distinguish individually the sheep of his flock, and, however strange this may seem, it is possible and true, for it is known that shepherds, particularly in the East, can and do thus distinguish the individuals in even very large flocks. The pastoral custom here alluded to, of giving names for distinction to particular sheep, was by no means confined to the East. It was also usual among the shepherds of Greece*."

In the fourth verse it is said, "And when he putteth forth his own sheep, he goeth before them, and the sheep follow him, for they know his voice." "The word rendered 'voice' has a much wider meaning, being applicable to any kind of sound, and when thus applied to a shepherd leading his flock, may mean not only a call in the natural voice, but any call, such as by a pipe or whistle: and the shepherd is said to *lead* his flock, not to *drive* it, as our own habits might lead us to suspect. The same custom is

* Pictorial Bible.

still observed in the East and in some parts of Europe, in application to herds as well as flocks. It exists in Spain, having probably been introduced by the Arabs; and is found also in Russia, in the villages of which, we have often seen, of a morning, a peasant marching through the street playing on a pipe, on hearing which, the animals came forth from their various cottage homesteads, following him to the pasture. They are brought home in the evening, and called to be milked in the same manner*." In Italy, those who have the care of swine always go *before* them, and from time to time sound a horn. Polybius says, that in the island of Corsica the herds and flocks were called together by the sound of a trumpet, and that they never mistook one shepherd for another, or failed to distinguish the peculiar sound of their own guide. This is a striking illustration of the next verse: "And a stranger will they not follow, but will flee from him, for they know not the voice of strangers." The whole of this chapter forms a very interesting similitude between a good shepherd who would even "lay down his life for the sheep" under his care, and that good shepherd who would have led his people into the "pleasant pastures" of goodness,

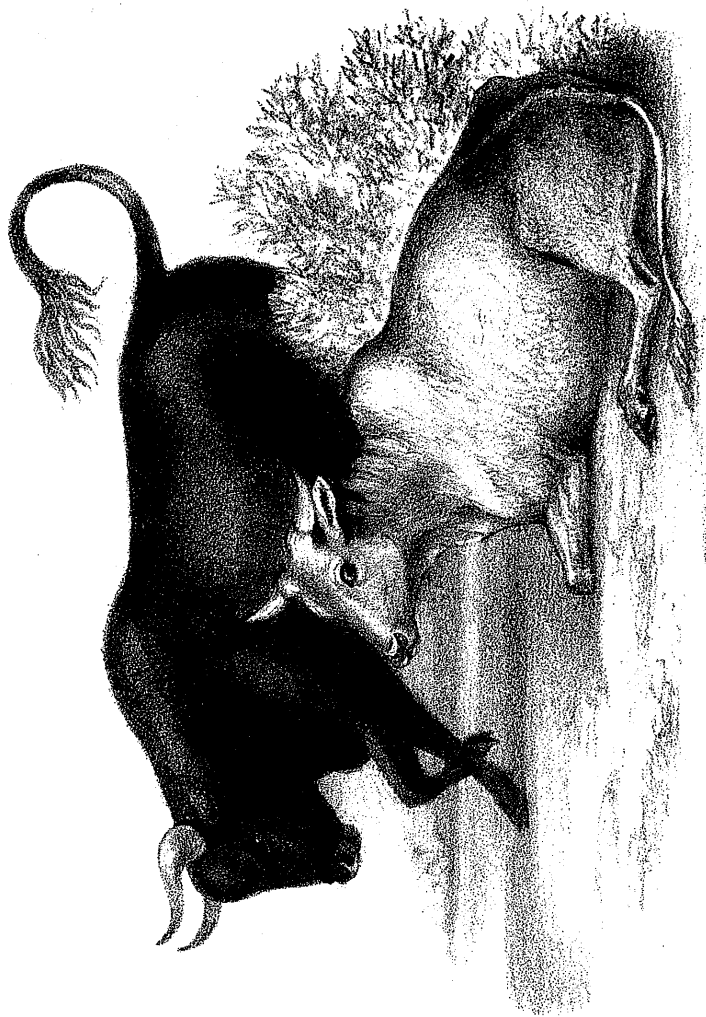
* Pictorial Bible.

charity, meekness, and love, but they "would not," and refused to hear his voice, or follow him.

Another chapter, which will be read by the student with pleasure, is the 34th of Ezekiel, where, under the semblance of shepherds, a deep reproach is conveyed to the rulers of the people for their neglect of the *sheep* committed to their care. David's beautiful Psalm, using the same metaphor, will occur to most readers:—"The Lord is my shepherd; I shall not want. He maketh me to lie down in green pastures; he leadeth me beside the still waters. He restoreth my soul; he leadeth me in the paths of righteousness for his name's sake. Yea, though I walk through the valley of the shadow of death, I will fear no evil, for thou art with me; thy rod and thy staff they comfort me. Thou preparest a table before me, in the presence of my enemies; thou anointest my head with oil; my cup runneth over. Surely goodness and mercy shall follow me all the days of my life; and I will dwell in the house of the Lord for ever."

"The lamb, in Christian art, is the peculiar emblem of the Redeemer, as the sacrifice without blemish; in this sense it is given as an attribute to John the Baptist. The lamb is also the general emblem of innocence, meekness, and mo-





Wild Ox.
Isaiah 57.

Syrian Ox.
Genesis 12.

desty; in this sense it is given to St. Agnes, of whom Massillon said so beautifully, 'Peu de pudeur où il n'y a pas de religion, peu de religion où il n'y a pas de pudeur*.'"

Bos.—The Ox. (Plate VI. the Syrian Ox.)

Cattle are generally distinguished as having smooth hollow horns, directed sideways, and then curving upwards or forwards; the body is of a thick and heavy form, and the tail long, terminated by a tuft of hair. Mr. Bell, in his 'History of British Quadrupeds,' says, "Of all the animals which have been reduced into the immediate service of man, the ox is, without exception, that to which he is most indebted for the variety and extent of its means of usefulness. The universal utility of the animal appears to have been very soon detected, and we find, consequently, that its domestication constituted one of the earliest triumphs of human authority over the natural instincts and habits of the brute creation. That this event took place before the flood, and induced, even then, that propensity to a pastoral life, which has ever been characteristic of man in his less cultivated state, wherever the climate was such as to encourage or permit it, we have the Sacred Writings to attest; for we are told that Jabel, the son of Lamech,

* Mrs. Jameson's 'Legendary Art.'

was the father, or ancestor, 'of such as live in tents, and of such as have cattle.' From the time when the family of Noah issued from the ark, in every quarter of the earth which his varied and multitudinous descendants have cultivated, the ox has been reared, as the most useful and important aid to the necessities of mankind."

It has been generally thought that domestic cattle are descended from the Indian and European buffalo, *Bos Bubalus*, though some naturalists are of opinion that the aurochs, or wild cattle of Germany and Poland, have more claim to this distinction. Baron Cuvier differs from both these suppositions, and imagines that the present race of cattle are identical with a species which is no longer to be found in a wild state, but, like the camel, has been for ages subjected to the power of man. Fossil remains of this animal have been discovered, and the comparison of these remains with the skeleton of the aurochs, the buffalo, and the domestic ox, gave rise to the opinion of this celebrated naturalist.

There are many varieties of this useful animal in England and other countries: in the islands and Highlands of Scotland they are small, and generally black; the Devonshire, Leicestershire, and Alderney cattle are all noted for their

peculiar qualities. The wild cattle which formerly inhabited the great Caledonian forest, are now reduced to a small number at Chillingham Park, Cadzowe, near Hamilton, etc. They are cream-coloured, with part of the ear red, the horns white, with black tips, of a fine form and bent upwards; some of the bulls have a thin upright mane. The probable history of these creatures seems to be "that the same species of wild cattle, prevalent in Scotland, had extended to the northern districts of England; that in proportion as population and culture advanced, they became here, as in Scotland, the subjects of almost universal slaughter, and that a few of those that escaped had found sanctuary in the great wood at Chillingham*." Another supposition is, that after the enclosure of the park at Chillingham, they had been brought and located there, as a relic of the ancient Caledonian cattle.

The Cape Ox (*Bos Caffer*) is superior in size and in strength to the largest English specimen. Its colour is deep brown, the hair on the head and breast being very long; from the hind part of the head to the middle of the back is a loose black mane, and the end of the tail is covered with long hair; the horns are black, very broad at

* Annals of Natural History.

the base, spreading over the head, then becoming taper, and bending down on each side of the neck; the space between the tips is sometimes as much as five feet; the ears are long and somewhat pendulous. The Cape ox is a most powerful and fierce animal; it is found in large herds in the interior of South Africa.

The Jungle Ox (*Bos frontalis*) is a domestic race in the mountain districts of India; it resembles our domestic ox, but has the horns flattened and more or less upright.

The Brahminy bull (*Bos Indicus*), which is held sacred in many parts of India, is of a light grey colour, sometimes varying to milk-white, and in size ranging from that of an ordinary bull to a Shetland pony. The limbs are elegantly formed, the horns are short, the ears long and pendulous, and nearly all are distinguished by a hump.

Cattle are mentioned in the 1st chapter of Genesis, and probably include all the ruminant animals, if not all those of a herbivorous nature. In the 4th chapter it is said that Jabel, the son of Lamech, "was the father of such as dwell in tents, and of such as have cattle;" showing that this useful creature was already domesticated. The expression "he was the father" was common among the Jews, and meant that the person so designated was remarkable for the

circumstance mentioned: "thus, the first of the Arabian caliphs is known as *Abu-bekr*, 'the father of the girl;' that is, of Ayesshah, the wife of Mohammed. The same practice extends to the domestics of a large household, each of whom is called the father of that department of duty entrusted to him*."

Cattle are frequently named in the early chapters of Genesis, and in the 12th are included in the presents given by Pharaoh to Abraham, when this patriarch was journeying through Egypt with his wife Sarah. In the Hebrew the words which denote an "ox" and "the morning" are very nearly alike; this similarity perhaps arose from a fancied resemblance between the horned front of the animal, and the rays of the sun when about to emerge from below the horizon. Soon after this event Abraham is said to be "very rich in cattle," ch. xiii., and the Arab tribes, which claim to be descended from the patriarch, still reckon their wealth principally by the number of their flocks and herds.

In the notes to the 'Pictorial Bible,' from which so much information has been already gleaned, is an interesting explanation of the following verse in the 18th chapter: "And

* Pictorial Bible.

Abraham ran unto the herd, and fetched a calf tender and good, and gave it unto a young man, and he hasted to dress it." "The orientals consume a very small quantity of animal food; and the nomades, with their ample flocks and herds, less than other orientals. There was probably not a morsel of meat in Abraham's camp in any shape whatever. Their usual fare consists of flour made into a paste, and boiled with sour camels' milk; and the Arabs never indulge in animal food and other luxuries, but on the occasion of some great festival, or on the arrival of a stranger, when a kid or lamb is killed." Sometimes this is dressed whole, but when pressed for time, as on this occasion, the meat is cut into small pieces, and either boiled or put on skewers and broiled over the fire. It appears strange to dress meat so immediately after the animal is killed; but this is a universal custom in the East, and no doubt originated in the heat of the climate. Butter and milk are both mentioned here as common articles of food, and, if we may judge by the present habits of the Arabs, were used in astonishing profusion. Burckhardt mentions, that those who can afford such a luxury, swallow every morning a cupfull of butter in a liquid state: all Arab food swims in this substance; and some tribes even wel-

come a stranger by pouring melted butter on his head. Our way of spreading it thinly on bread is unknown to the Arabs; and when they do eat it with bread, the bread forms but a small item in the repast, so that it might, with propriety, be called butter and bread, rather than, as with us, bread and butter.

Milk, in its various forms, is a great article of diet with the Arabs and other pastoral tribes, many living almost entirely on dates and milk; sweet milk is handed round after every meal, and buttermilk is also much used. Sour milk mixed with water is a favourite beverage with the western Asiatics, and is said to be really refreshing in warm climates. Excellent cream is made by the usual process. "From the frequent mention which is made of milk, milk meals must have been very common among the Hebrews, who seem to have been always, even in their settled state, more a pastoral than an agricultural people. In Proverbs xxvii., goats' milk is mentioned as a principal article of diet in a Hebrew household. The milk of goats is perhaps there mentioned, as being of the best quality. It is decidedly so considered in the East; the Arabs drink camels' milk, but all their butter and cheese is made with that of goats and sheep, which are milked by the women every morning before day-

break. Cows' milk is held in comparatively little esteem, and is in fact much inferior to that which our own cows produce*." In 2 Samuel xvii. "cheese of kine" is mentioned, evidently as a distinction from that of goats; and wherever it is not specified, the former of these may be generally understood.

That the Jews had conformed to the worship of the bull Apis, when sojourning in Egypt, may be gathered from many parts of their history, and is, indeed, expressly mentioned in Joshua xxiv. : "Now therefore fear the Lord, and serve him in sincerity and in truth, and put away the gods which your fathers served on the other side of the flood, and in Egypt;" it is, therefore, no matter of surprise, that during the absence of Moses in the Mount, the fickle people, despairing of his return, should propose to Aaron the fashioning of a golden calf—"Up, make us gods, which shall go before us; for as for this Moses, the man that brought us up out of the land of Egypt, we wot not what is become of him." The Apis of the Egyptians was a living bull, generally supposed to be a symbol of their chief deity Osiris, or the sun; it was necessary that the animal selected for this honour should be black, with a square or triangular white

* Pictorial Bible.

spot on the forehead ; the figure of an eagle, or some say a crescent, on the back, the hairs of the tail double, and an excrescence under the tongue in the form of a beetle. Years sometimes elapsed before an animal answering this description could be found to supply the place of one which had died ; but when discovered, it was conducted with great rejoicings to the temple of Osiris. This worship retained a strong hold on the fancy and affection of the people of Israel, for amongst other instances, it will be recollected that many centuries after the Exodus, king Jeroboam induced them to worship the golden calves which he (who had resided in Egypt) set up in Dan and Bethel ; but before condemning them it ought to be remembered that they were surrounded by idolatrous nations, and had no example of the worship which was required from them by Moses.

Cattle were amongst the animals used as food by the Israelites, as they possessed both the peculiarities mentioned in the commands of Moses ; they were also extensively employed in sacrifice, and are mentioned in almost numberless cases as offerings at the altar. "Young bullocks," "oxen," and "calves," are words of constant occurrence in connection with the services of the temple, and Solomon is said to have offered "two-and-twenty thousand oxen," besides sheep, at

the solemn dedication of the "house of the Lord," an immense slaughter, in conformity with the feelings of the age, but not with the spirit which dictated the words, "The sacrifices of God are a broken spirit, a broken and a contrite heart, O God, thou wilt not despise." A great proportion of the flesh was, no doubt, distributed among the multitudes assembled at Jerusalem. With heathen nations it was a custom to sacrifice in acknowledgment of great victories, or to arrest public calamities, as many as a hundred oxen or other animals, which was called a hecatomb; but this was very insignificant compared to the offering of Solomon.

Oxen were evidently used as beasts of burden by the Hebrews; for instance, in 1 Chronicles xii. is the following passage—they "brought bread on asses and on camels, and on mules and on *oxen*." This custom prevails in the East to this day; and they are not only employed in agriculture, which is, in a certain degree, practised almost universally, but for riding, particularly by women and aged persons, and also for drawing the various conveyances of the country. "At Constantinople they draw the ornamented *arabah*; wherever the peasantry employ carts, they are drawn by oxen; in the Tartarian Steppes they draw the moveable huts and baggage of the nomades; and in India are yoked

to the carriages even of the wealthy natives. The docile and vigorous white oxen of Guzerat are especially esteemed for this service, and will travel at the rate of from thirty to forty miles a day*."

ORDER CETACEA.

BALÆNA.—The Whale.

The Whale belongs to an order of aquatic mammalia, distinguished by their fin-like anterior extremities, the hinder extremities being in the form of a large fin or tail; having no outward appearance of a neck; a very large head, at least one-third the length of the body, and whalebone in the jaws.

Balæna Mysticetus, the common whale, measures about sixty feet in length, and from thirty to forty in circumference; the body very bulky, and suddenly tapering to the tail; the head very large, the lips five or six feet high; the eyes small; the general colour blackish-grey, and white underneath.

Balænoptera physalis is longer than the last species, often

* Pictorial Bible.

measuring one hundred feet; the food of this enormous animal consists of fish, mollusca, and the smaller crustacea.

Physeter macrocephalus is the sperm or spermaceti whale; it is usually less than the *Balænoptera*, the head is very thick and blunt; on the back is a large protuberance, beyond which the body gradually tapers to the "flukes" or tail. On the right side of the nose and head is a large cavity, which contains an oily fluid, of a yellowish colour, called spermaceti; this cavity sometimes contains ten large barrels of this useful substance.

In the 1st chapter of Genesis it is said that "God created great whales." "Under the term '*tannim*' are comprehended all those mammiferous tenants of the ocean, which belong to the order *Cetacea*. Of this order the sea-calf, dolphin, porpoise, and whale are examples. Though they inhabit the same medium, and resemble fishes in their general form, yet they differ from them in many important particulars. They respire by means of lungs, though destined to spend their lives in the water, and are, therefore, obliged from time to time to ascend to the surface to inhale the atmospheric air; their blood is warm, and their ears open outwards, though by small orifices*." In Lamen-

* Pictorial Bible.

tations is a striking corroboration that the word which in Genesis is translated "whales" included the whole of the mammiferous inhabitants of the deep, for there it is rendered "sea-monsters:" "even the sea-monsters draw out the breast, they give suck to their young." In the history of Jonah, again, it is not necessary to define the "great fish" to be a whale, for though in Matthew xii. 40 this word is substituted, it is not to be understood of any one fish, but as a general name for all the larger inhabitants of the deep; and the whale being unknown in the Mediterranean, seems to set the question at rest.

The word "leviathan," which occurs in Job xli., Isaiah xxvii., and in Psalm lxxiv., was supposed by all the old commentators to be the whale, but all modern critics have identified it with the crocodile: this change of opinion is supported with very strong arguments by Bochart, which will be readily understood after reading the 41st chapter of Job, the whole being devoted to a description of the animal called Leviathan. In the first place the whale tribes do not inhabit the Mediterranean, and though some species have occasionally been found there, the great whale has probably never been seen in that locality. The description too, which is sufficiently minute, does not apply: thus in the

18th verse it says, "His eyes are like the eyelids of the morning," whereas the eyes of the whale are very small. It is remarkable that the ancient Egyptians used the eye of the crocodile as a hieroglyphic, to denote the rising of the sun, because they first become visible when it rises out of the water. "His teeth are terrible round about;" the whale, on the contrary, has no proper teeth, only the horny substance which we call whalebone. "Canst thou put an hook into his nose?" and "Out of his nostrils goeth smoke, as out of a seething pot, or cauldron:" whales possess neither proper snout nor nostrils, as they breathe through a spiracle, or blowing-hole.

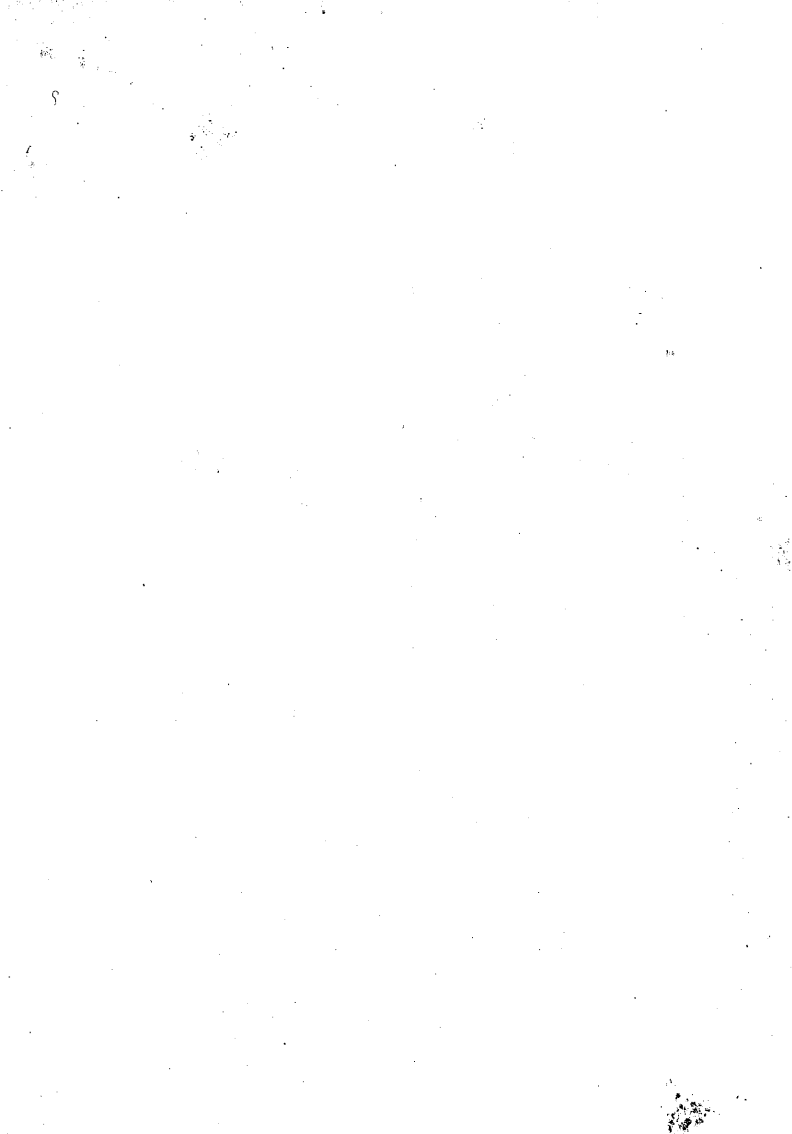
The whole of this powerful description, allowing for the somewhat extravagant Eastern imagery, is very applicable to the crocodile, which abounds in the Nile and other African and Asiatic rivers. It is possessed of immense voracity and strength, as well as fleetness in swimming, and attacks mankind with great impetuosity; has an enormous mouth, with very large and formidable teeth; and is furnished with a coat of mail so scaly and hard, as to resist the force of a musket-ball. "His scales are his pride, shut up together as with a close seal. The sword of him that layeth at him cannot hold, the spear, the dart, nor the habergeon. He es-

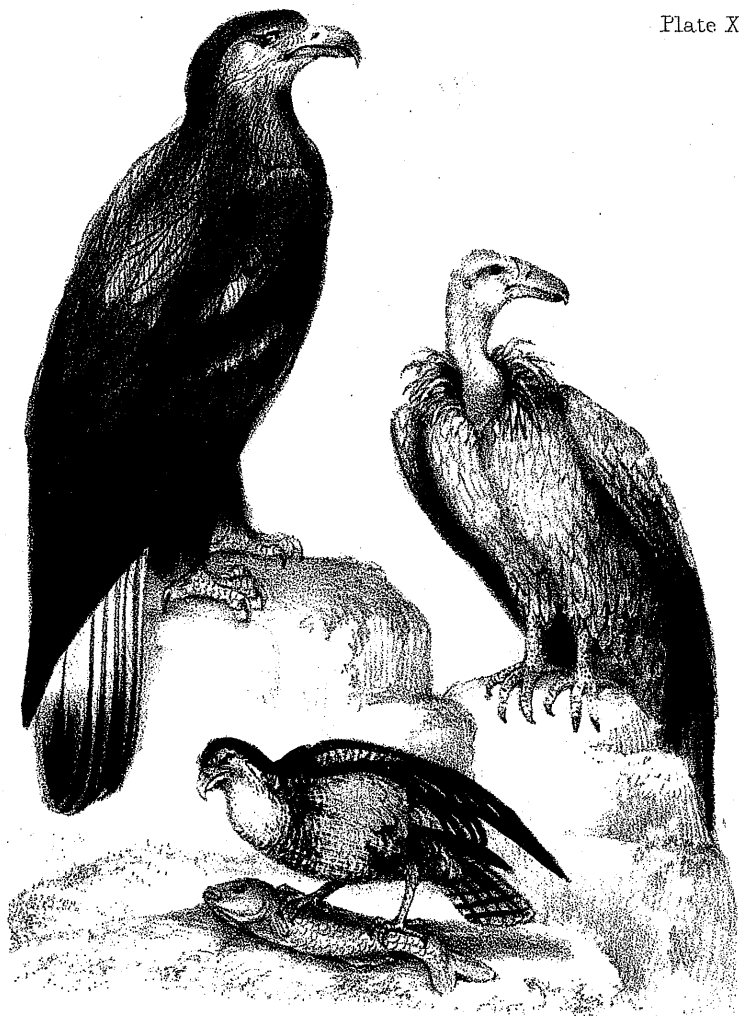
teemeth iron as straw, and brass as rotten wood. The arrow cannot make him flee, sling-stones are turned with him into stubble. Darts are counted as stubble, he laugheth at the shaking of a spear."

One objection urged against the crocodile is, that it is represented as untameable, whereas that animal has certainly been tamed in many instances,—at Arsinoë, for instance, where Strabo saw one, which allowed the priests to open his mouth, cram it with good things, and when satisfied would jump into an adjoining piece of water and swim about with great glee. One of the Townley marbles also represents an Egyptian tumbler exercising his feats on the back of a tame crocodile. But in answer to this objection, it may be said, that there is actually no assertion in the present chapter of the untameable nature of the leviathan; the first verses may, indeed, imply great difficulty, but this is all: "Canst thou draw out leviathan with an hook? or his tongue with a cord which thou lettest down? Canst thou put an hook into his nose, or bore his jaw through with a thorn? Will he make many supplications unto thee? Will he speak soft words unto thee? Will he make a covenant with thee, wilt thou take him for a servant for ever? Wilt thou play with him as with a bird, or wilt thou bind him for thy maidens?"

The crocodile (*Crocodylus vulgaris*) is about twenty feet long, sometimes even thirty, and covered with most elaborate armour; the colour is blackish-brown above, and yellowish-white underneath; the mouth is of vast size, and armed with numerous sharp teeth; the tail is long and powerful; the legs very short, but strong and muscular; the hind feet have only four toes, which are united by a strong web: the crocodile is oviparous, the eggs being about the size of those of the goose, and are deposited in the sand or mud on the banks of rivers. The crocodile preys on fish; it is now only found in the upper parts of Egypt, where the heat is the greatest; and in the rivers Senegal, Jaire, etc., it is still common. The Alligator of America, and the Gavial of the Indian rivers, are of the same family and habits, though differing in many particulars.

These formidable creatures belong to the Class *Reptilia*, Order *Sauria*, and have been necessarily mentioned out of their proper place in the classification.





Bearded Vulture.
Job. 39. 27.

Osprey.
Leviticus 11. 13.

Griffon Vulture
Job. 28. 7.

CLASS A V E S.



ORDER ACCIPITRES.

VULTUR.—The Vulture. (Plate X. *Vultur fulvus*, the Griffon Vulture.)

This family of birds is characterized by an elongated beak, curved at the tip, and by having a portion of the head bare of feathers; sometimes the neck is also denuded. In general, vultures live on dead carcasses and offal of various kinds: they are, as Mr. Swainson observes, the great scavengers of nature in hot latitudes, where putrefaction is most rapid and most injurious to health, and the disposition of their numbers is regulated by an all-wise Creator according to their usefulness. They are sparingly scattered over the south of Europe; in Egypt they are much more numerous; but in tropical America, although the species are fewer, the individuals exist in far greater numbers.

There are many species;—such as the *Vultur auricularis*, or Sociable Vulture, inhabiting the greater part of Africa; its head and the greater portion of the neck are red and naked; the throat is covered with blackish hairs, and the lower part clothed with a ruff of black curling feathers; the plumage of the body, wings, and tail, is of a dark brown colour, rather lighter beneath, and showing the pure white down with which the body is closely covered. This bird measures ten feet across the expanded wings; the female builds her nest in the fissures of rocks, and lays only two or three eggs. The size of this species renders it a fit instrument for clearing its native country of the remains of the large mammalia which are its inhabitants, the elephant, hippopotamus, giraffe, etc.; and no sooner has death seized its prey, than the vultures assemble in prodigious numbers, and soon clear the earth and air from the taint of the rapidly decomposing body.

The Egyptian Vulture (*Neophron percnopterus*) is the smallest of the tribe, and inhabits the shores of the Mediterranean. The front of the head and the upper part of the throat are bare, and of a yellow colour; the plumage white, excepting the quill feathers, which are black; legs, feet, and bill yellow; the tip of the latter being black.

This species flies with great strength and rapidity: specimens have occasionally been found in the British Isles.

The Griffon Vulture (*Vultur fulvus*, Plate X.) inhabits the mountainous districts of the north of Europe, Silesia, Dalmatia, Spain, the Tyrol, the Alps, Pyrenees, Turkey, and the Grecian Archipelago, also Persia and Africa. Its nest is usually placed on high and inaccessible rocks, or very lofty trees. In length it is about three feet, with an expanse of wing measuring eight or nine. The colour is a deep reddish-grey, with the quill feathers and tail black; the head and neck are not quite bare, but are covered with a short down, and the ruff is pure white. These birds can descry a carcase at an extraordinary distance, whether by scent or sight is not quite ascertained; Job evidently ascribed it to the latter, as he says, "There is a path which no fowl knoweth, and which the vulture's eye hath not seen."

The vulture is mentioned in the 11th chapter of Leviticus, amongst those fowls which the Hebrews were forbidden to use as food; all of which are of those species not eaten in the present day, probably from their habits being carnivorous, which renders the flesh less proper for that purpose. Hasselquist, a pupil of Linnæus, mentions

that he saw two species of vulture in the Holy Land; one near Jerusalem, the other near Cana, in Galilee.

AQUILA.—The Eagle.

This bird is distinguished by a very strong hooked beak; rather short but very strong legs, the toes armed with large and powerful talons; both the wings and the tail are large and possess very great strength and power of flight; the eyes are proverbially keen and penetrating, and the sight is the chief sense on which the eagle depends for food.

Homer says—

“The field exploring with an eye
Keen as the eagle’s, keenest-eyed of all
That wings the air, whom, though he soar aloft,
The lev’ret ’scapes not, hid in thickest shades,
But down he swoops, and at a stroke he dies.”

And Job—“Doth the eagle mount up at thy command, and make her nest on high? She dwelleth and abideth on the rock, upon the crag of the rock, and the strong place. From thence she seeth the prey, and her eyes behold afar off.”

Small mammalia, such as hares, marmots, or the young of the mountain goat or antelope, are their favourite prey, though the species which approach the nearest to the vulture have no objection to those animals which have fallen

victims to any casualty. The female generally lays two eggs, and the eyrie, which is used as a dwelling, as well as a nest for the young, is placed on a ledge of rock, very rarely on a tree. Jeremiah alludes to the nest of the eagle, in his denunciations against the Ammonites, showing that the habits of the bird were well known to him: "O thou that dwellest in the clefts of the rock, that holdest the height of the hill, though thou shouldest make thy nest as high as the eagle, I will bring thee down from thence, saith the Lord."

The eagle takes that place amongst birds which is given to the lion amongst quadrupeds, being considered the king of the feathered tribe; it was also, in the heathen mythology, made the associate and emblem of Jupiter himself, and is still called the bird of Jove.

Eagles may be divided into four distinct kinds:—"the Eagle *par excellence*, meaning the golden eagle and the rest of the more powerful mountaineers agreeing most closely with it in habit; Vulture Eagles, or those which live more in the vicinity of woods, and which, though large in size, are not so compactly built, or proportionately so strong; Fishing Eagles, or those which chiefly or partially levy their contributions upon the waters; and Hawk

Eagles, or those of smaller size and comparatively feebler powers*.”

The Golden Eagle (*Aquila chrysaetos*, Plate X.) is the largest of the European eagles, the extent of its wings being above seven feet; its general colour is deep brown, rather tawny on the head and neck, the feathers on the back being shaded with a darker hue; the legs are yellow, short, and very strong, feathered to the feet, which are armed with powerful claws. This species is found in various parts of Europe and Asia, and occasionally in Ireland, Scotland, and Wales.

The White-tailed Eagle (*Haliaetus albicilla*) inhabits northern Europe and Asia, and is found in Scotland: the general colour of the plumage is brown, the breast being spotted with white; sides of the head and neck pale ash mixed with reddish-brown; the legs are bright yellow; the claws black. It is a strong and fierce bird, building its nest on lofty trees, and usually laying two or three eggs. This species is supposed by many commentators to be the “ossi-frage” of Leviticus xi.; others think a falcon, vulture, or the black eagle is intended, but it is very difficult to identify many of the birds there named.

* British Cyclopædia.

The eagle is one of the birds prohibited as food in Leviticus xi. The gier eagle mentioned in the same chapter is supposed by the authors of the Septuagint to be the swan: the name obviously pointing to some bird noted for its attachment to its young, and the swan, in spite of its generally inoffensive disposition, will attack even man himself in their defence; the eagle, however, is by no means wanting in affection and care for its brood, and there is a beautiful allusion in Deuteronomy xxxii. to the attempts of the parent bird to teach her young to fly: "As an eagle stirreth up her nest, fluttereth over her young, spreadeth abroad her wings, taketh them, beareth them on her wings, so the Lord alone did lead him," meaning Israel.

A striking parable may be seen in Ezekiel xvii., in which, under the similitude of two eagles and a vine, the prophet shadows forth some of the events that were to take place in the latter days of the Hebrew kingdom. The eagle is there made the symbol of imperial power, as it has so often been in later times: an eagle with expanded wings formed the imperial standard of the Persians under Cyrus; it was also thus used by the Romans; and modern nations have adopted a similar ensign, as a type of strength, power, and swiftness.

PANDION HALLÆTOS.—The Osprey, or Fish-hawk. (Pl. X.)

This is one of the most numerous of the larger birds of prey, and is a native both of Europe and Asia; living on the sea-shore, and the borders of lakes and rivers. It is about two feet long; the head small and flat, the crown white, marked with dark spots; the upper parts of the body are of a rich glossy brown, the under parts being white, slightly spotted with brown on the breast; the legs are short, thick, and strong, of a pale blue colour, the claws being black; the outer toe is larger than the inner one, and easily turns backwards, thus enabling the bird more readily to secure its prey, which consists principally of fish, and on which it darts with wonderful velocity and with an unerring aim. The osprey builds its nest on the ground, and lays three or four eggs. The name of this bird only occurs once in the Bible, and this is in Leviticus xi., where it is classed with those birds that are unfit for food: some commentators suppose the black eagle to be intended, but the probabilities seem to be quite as strong in favour of the osprey.

ASTUR.—The Hawk.

A genus of birds of prey very nearly allied to the Falcons. The wings are short and rounded, and better adapted for frequent ascent and descent than for long-continued flight;

the middle toe on the foot is longer than the side ones, and the claws are very crooked and sharp; the beak is of the same form as that of all birds which kill their prey and eat it in a fresh state, being curved from the base. Hawks are pretty numerous, and are found in almost every part of the world, in rich lowland districts; they build more in trees than either the eagle or falcon, between which they are in many respects intermediate.

FALCO (Accipiter) NISUS.—The Sparrow Hawk.

This species, which is very widely distributed in every part of the world, is very probably the "hawk" mentioned in Leviticus; it is found in all climates, from Russia to the Cape of Good Hope. It was held in great veneration by the ancient Egyptians, as the emblem of their deity Osiris; and by the Greeks it was consecrated to Apollo. The male is about twelve, the female fifteen inches in length; the plumage is of a deep bluish-grey, the under parts cream-colour, with transverse bars of a deep brown or orange; the quill-feathers are dusky, barred with black; the tail is of a deep ash-colour, marked with broad black bars; the bill and legs yellow. The female differs somewhat in colour, the head, back, and wing-coverts being browner, the tail of a brighter dove-colour, and the breast containing a greater

portion of white. She generally builds in hollow trees, lofty rocks, and ruins, laying four or five white eggs, spotted with red at the thicker end. In the 'Natural History of Selborne' it is mentioned that a pair of these birds had brought up their brood in an old crow's nest on a low beech in Selborne hanger, and were a terror to all the dames in the village who had chickens or ducklings under their care.

On the approach of winter the northern sparrow-hawks migrate southward, preying on the smaller migratory birds with great ferocity, whence the seamen in the Mediterranean give them the name of "corsairs." They remain stationary in Egypt, and the young ones are said to be used there as food.

The hawk is again mentioned in Job xxxix., and its migratory habits alluded to: "Doth the hawk fly by thy wisdom, and stretch her wings toward the south?"

FALCO MILVUS.—The Kite.

This bird is easily distinguished from the rest of the hawk kind by its forked tail. Its length is about two feet, its breadth five; the bill very much curved at the end; the feathers on the neck are long, of a grey colour, streaked with brown; the remainder of the plumage is brown, with

a tinge of orange-colour; the legs are yellow. The kite builds in forests, in the forked branch of a large tree, the outer part being formed of twigs, and the inner lined with wool, or some equally soft warm substance; the female lays two or three eggs of a whitish colour, spotted with yellow. The kite is almost perpetually on the wing, and its flight is easy and elegant as it hovers over its prey, of which young ducks, chickens, and goslings form a favourite part.

“There was a time when the kite appears to have been of as much service in London as the vulture still is in some of the crowded cities of the East, for we read that in the reign of Henry VIII. the British metropolis swarmed with kites, attracted thither by the various kinds of offal thrown into the streets, and that these birds fearlessly descended, and fearlessly performed the scavengers’ office in the midst of the people, it being forbidden to kill them*.” In Turkey and Egypt they are still very useful in this respect, hovering about, and resting on houses till called by a whistle, when they descend and clear the ground of any refuse matter.

There are several species of kite in southern Asia, America, and Australia, but they differ very little from the com-

* Maunder’s Treasury.

mon European species. The kite is named in Leviticus xi. as an unclean bird, and there only.

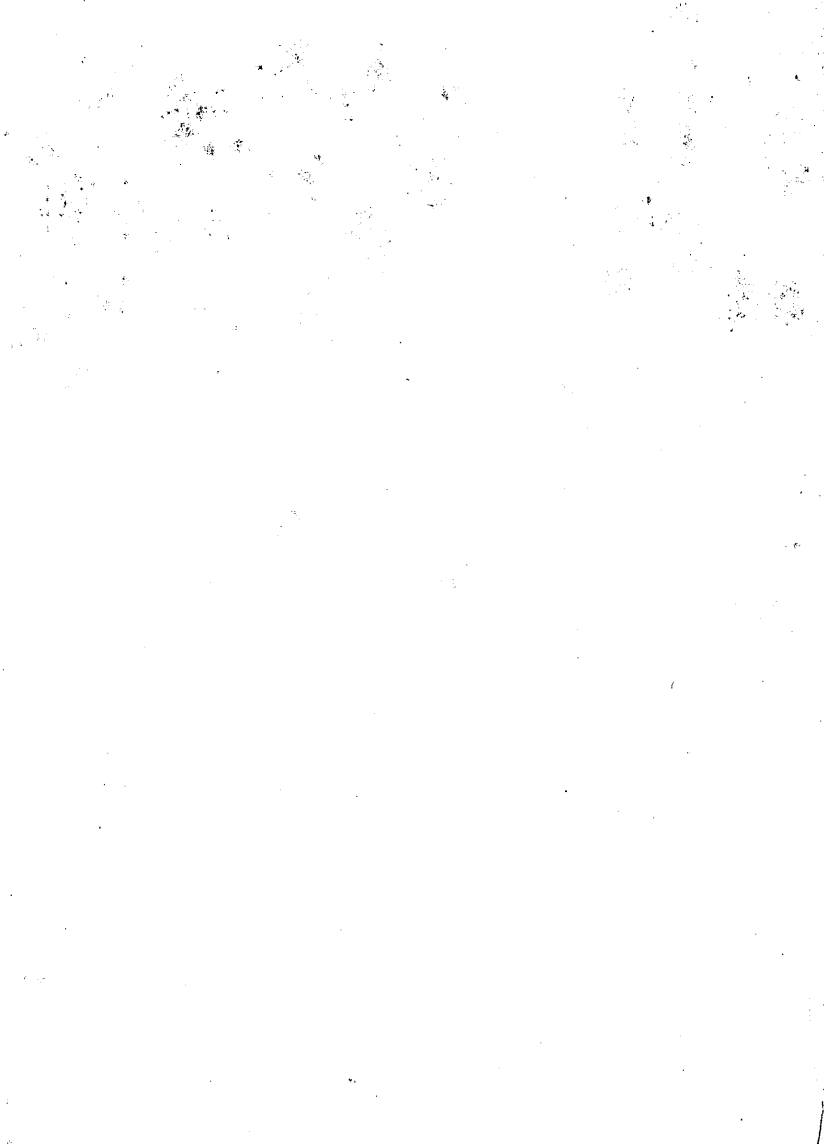
STRIX.—The Owl. (Plate XI. *Strix flammea*, the Barn Owl.)

This name is mentioned three times in Leviticus xi., as the "owl," "little owl," and "great owl," and again in Isaiah xxxiv., the "screech owl;" but all these are supposed to point out different birds. The first, *bath-hayyanah*, translated "owl," is generally agreed to denote the ostrich; *yanshuph*, the "great owl," seems to be the sacred ibis; these two will be therefore noticed elsewhere. *Cos*, the "little owl," and *tachmas*, the "night-hawk," remain to be considered: with regard to the latter there seems to be considerable obscurity as to species, but its original name signifies a bird of ravenous and predatory habits, and Haselquist describes one as "of the size of a common owl, and being very ravenous in Syria; and in the evenings, if the windows are left open, flying into houses and killing infants unless they are carefully watched." This may be the bird in question, but it is quite impossible to come to any satisfactory decision. The "little owl" is probably the common barn owl, *Strix flammea*, which is widely distributed over Europe, Asia, and America; some writers think the sea-



Barn Owl.
Leviticus 11.17.

Screech Owl.
Isaiah 34.14.



gull is intended, but as the majority incline in favour of the owl, it will be a favourable occasion for giving a short notice of these singular birds.

The family *Strigidae* may be considered as a kind of nocturnal hawk, and Linnæus has observed that they differ from those birds in the same manner that moths do from butterflies, the one being chiefly nocturnal, the others diurnal. They have a large head; projecting eyes, which are surrounded with a circle of loose delicate feathers, covering the base of the beak; a strong hooked bill; crooked claws; the plumage very downy, and often spotted or barred with shades of brown or yellow. The external toe possesses the power of being moved either backwards or forwards; the eyes are particularly adapted for seeing objects in the dusk, and, unable to bear the light of the sun, the owl retires to some lonely retreat, where it passes the day, and on the approach of night comes forth in quest of prey, such as small birds, mice, bats, and moths, which it swallows entire. It builds in fissures of rocks, in old buildings, or in holes of trees, the female laying from two to six eggs.

“The owl family is very numerous, and may be subdivided into the three following groups:—the *typical owls*

(whose adaptation to nocturnal habits is most complete, and who, during the day, with their eyes half shut, present a great appearance of gravity), have a large external ear, and large and complete discs round the eyes; the *horned owls*, in which the external ear is smaller, but the discs round the eyes still large, and in which the head is furnished with two feathery tufts resembling horns; and the *hawk-owls*, in which the external ear is very small, the discs wanting, and the feathery tufts absent*."

The Barn Owl (*Strix flammea*, Plate XI.) is found throughout the temperate and warm regions of Europe (other species, more or less resembling it, being known in most of the temperate portions of the globe), and is probably the one alluded to in Leviticus. It is a beautiful bird, measuring about fourteen inches in length; the head and upper parts of the body are of a pale orange-colour, slightly marked with chestnut spots; the feathers on the back are tipped with grey, and finely sprinkled with black; the face is white, but the ruff is elegantly edged with a mixture of reddish-brown and white; tail and quill-feathers slightly barred with brown, and the whole of the under parts white.

Mr. Waterton says, that "if this useful bird caught its

* Maunder's Treasury.

food by day, instead of hunting for it by night, mankind would have ocular demonstration of its utility in thinning the country of mice, and it would be protected and encouraged everywhere. It would be with us what the ibis was with the Egyptians. When it has young it will bring a mouse to the nest every twelve or fifteen minutes. But in order to have a proper idea of the enormous quantity of mice which this bird destroys, we must examine the pellets which it ejects from its stomach in the place of its retreat. Every pellet contains from four to seven skeletons of mice; and in sixteen months from the time that the apartment of the owl on the old gateway was cleaned out, there has been a deposit of above a bushel of pellets."

With reference to this "old gateway" and its inhabitants, the same eminent naturalist says, "On the ruins of the old gateway, against which tradition says the waves of the lake have dashed for the better part of a thousand years, I made a place, with stone and mortar, about four feet square, and fixed a thick oaken stick firmly into it; huge masses of ivy now quite cover it. In about a month after it was finished, a pair of barn owls came and took up their abode in it. I took upon myself the whole responsibility of all the sickness, woe, and sorrow that the new tenants might bring to

the Hall. When I found that this first settlement had succeeded so well, I set about forming other establishments. This year I have had four broods. . . . Confident of protection, these pretty birds betray no fear when the stranger mounts up to their place of abode. Whenever we go to look at them, we invariably see them upon the perch, bolt upright, with their eyes closed, apparently fast asleep."

The word *lilith*, translated "screech-owl" in Isaiah xxxiv., and which occurs there only, is supposed to mean the eagle-owl, *Bubo maximus*, or *Strix Bubo* (Plate XI.), which haunts ruinous places in many parts of the world; its appearance, and the dismal sounds it utters, harmonizing well with the localities which it delights to frequent. This owl is found in various countries of Europe, in the north of Africa, in western Asia, and in the United States of America. Wilson says, "This noted and formidable owl is found in almost every quarter of the United States. His favourite residence is in dark solitudes of deep swamps; here, as soon as evening draws on, and mankind retire to rest, he sends forth such sounds as seem scarcely to belong to this world, startling the solitary pilgrim as he slumbers by his forest fire, 'making night hideous.' Along the mountainous shores of the Ohio, and among the deep forests of Indiana, alone, and reposing

in the woods, this ghostly watchman has frequently warned me of the approach of morning, and amused me with his singular exclamations, sometimes sweeping down and around my fire, uttering a loud and sudden ‘Waugh O! waugh O!’ sufficient to have alarmed a whole garrison. He has other nocturnal solos, no less melodious, one of which very much resembles the half-suppressed screams of a person suffocating or throttled, and cannot fail of being extremely entertaining to a lonely benighted traveller, in the midst of an Indian wilderness.” The eagle-owl generally builds in lofty trees or in rocks; the eggs seldom exceed two in number, and are of a pure white colour. The bird itself is about two feet in length; its plumage is brown, mingled with yellow, and marked with wavy lines, bars, and dashes of black: the male has some white on the breast. One species of owl was the sacred bird of Minerva; it is also treated with great respect by some tribes of the American Indians. The Rabbits imagine the word *lilith* to denote a spectre in the form of a winged female, that lay in wait for children by night, and destroyed them. “In the unpublished travels of Captains Irby and Mangles the following observation occurs in their account of Petra:—‘The screaming of eagles, hawks, and *owls*, who were soaring above our heads in considerable

numbers, seemingly annoyed at any one approaching their lonely habitations, added much to the singularity of the scene.' Laborde also takes notice of the hootings of the *screech-owl* at night*."

ORDER PASSERES.

HIRUNDO.—The Swallow.

This favourite and well-known bird seems scarcely to need any description, as the habits of the family bring them so frequently before our eyes, and they are, consequently, more noticed than almost any other of the feathered tribe. The distinguishing characteristics are, the enormous length of the wings; the shortness of the beak, which is very deeply cleft, so as to form a large mouth, adapted for catching winged insects; and the extreme shortness of the feet, which prevents them from springing easily off the ground: consequently, they very seldom alight, and appear to live almost entirely on the wing, surpassing every other bird in the untiring rapidity of their movements.

Sir Humphry Davy says, "The swallow is one of my

* Pictorial Bible.

favourite birds, and a rival of the nightingale ; for he cheers my sense of seeing as much as the other does my sense of hearing. He is the glad prophet of the year, the harbinger of the best season ; he lives a life of enjoyment amongst the loveliest forms of nature ; winter is unknown to him ; and he leaves the green meadows of England in the autumn, for the myrtle and orange groves of Italy, and for the palms of Africa. Even the beings selected for his prey are poetical, beautiful, and transient. He is the destroyer of insects, the friend of man, and may be regarded as a sacred bird."

Wilson calls the swallow "a little winged seraph," when ridiculing the notion of its becoming torpid in the winter, and concealing itself at the bottom of lakes and rivers ; a notion now exploded, since observation has been more directed to the subject of migration.

Shakspeare thus alludes to the habits of the "martlet," or house martin, perhaps the most interesting of the tribe.

"This guest of summer,
The temple-haunting martlet, does approve
By his loved masonry, that the heaven's breath
Smells wooingly here : no jutty, frieze, buttress,
Nor coigne of 'vantage, but this bird hath made
His pendent bed and procreant cradle : where they
Most breed and haunt, I have observed the air most delicate."

The whole family are insectivorous, and are thus of the greatest service to man, in keeping within bounds many of those insects which would otherwise prove highly injurious. The swallow is always most abundant in rich and warm situations, for there insects abound, and by its means their numbers are regulated and limited.

There are many both native and foreign species of this interesting family; and for a full account, the reader must be referred to other works, as only a small number can be mentioned in this brief notice.

The Chimney Swallow (*Hirundo rustica*) is the only species properly called with us the swallow, the rest being either martins or swifts. Its general colour is black, with a tinge of greyish-blue; the throat and forehead are reddish-brown; the lateral tail-feathers are remarkably long, which produces the forked appearance, so characteristic of these birds. They form their nests in chimneys, outhouses, or ruins, laying three or four eggs, white, spotted with red; in the warmer parts of the country they have two broods; the one taking the wing in June, the other just before their departure in September. In Sweden they build in barns, and are called *ladu swala*, the barn swallow; in the warmer parts of Europe, where chimneys are rare, they construct

their nest in porches, gateways, and galleries. Gilbert White mentions one that built for two years together in the handles of a pair of shears, which were reared against an outhouse; and another that made its nest on the wings and body of a dead owl.

The House Martin (*H. urbica*) has the whole of the upper part of the body black, with the exception of a patch of white above the tail, while the under part is of a pure white, slightly tinged with grey in the female. It builds its nest under a projecting roof if possible; and when unable to do this, constructs a dome to keep off the rain. Jesse mentions a martin which built its nest, and reared its brood, on the knocker of the hall-door at a gentleman's house in Warwickshire. When the door was opened, the bird quitted its nest for a short time, but returned when the door was closed. In some parts of the country the house martin rears three broods in the year, laying four or five eggs each time. In the intervals the house sparrow sometimes takes possession of the nest, and the former owner is said to build her in, as she cannot forcibly eject the intruder. The eggs are white, inclining to dusky at the thicker end. The martin generally migrates in October.

The Sand Martin (*H. riparia*) is the smallest of the

British swallows. The plumage is not of so dark a hue as the last-named species, being of a brown colour above, and the under parts white; the wings and tail brown. The female lays five or six white, nearly transparent eggs, and has commonly two broods in the year; the nest is placed in deep holes excavated in sand-banks; these holes are often within a few inches of each other, and extend about two feet deep, at the end of which, the nest, consisting of fine grass and feathers, is placed: the young birds are fed with gnats, dragon-flies, and other insects. This species is by no means so common as the rest, and, unlike them in habits, it builds at a distance from the haunts of man, delighting in wild heaths and commons, particularly in the vicinity of lakes or ponds.

The Swift (*Hirundo* or *Cypselus apus*) is larger, stronger, and more rapid in its flight, arrives later in this country and departs earlier, than any of its family. Its length is nearly eight inches; colour sooty-black, tinged with green; the wings very long in proportion to the body, and the tail much forked; the legs are very short. The female is rather smaller, and the plumage more inclining to brown; she lays two white, oblong eggs, and has only one brood in the year. The swift builds in the crevices of high towers and

lofty buildings; the nest is composed of dried grass, silk-thread, feathers, etc., which the bird collects while on the wing; having only two young to feed, they are much at leisure. They are most active creatures, rising early, and retiring to rest later than any other bird; just before they retire, whole groups of them assemble high in the air, darting about with wonderful rapidity, and uttering their peculiar and joyous scream, which, though certainly unmusical, is anything but unpleasing, so much does it express of freedom and happiness. The Swedes have bestowed the name of *ring-swala* on the swift, from the perpetual circles it makes in its flight.

White, in his 'Natural History of Selborne,' gives a very amusing account of a young swift which had fallen from its nest, and been captured by some children, when full fledged, but incapable of flight; he fed and nursed the little creature for nearly a fortnight, exercising it by degrees in the art of flying, which it learned but slowly. At length, finding that the swifts had not many more days to remain in England, he determined to take his nursling to a level meadow, and try its powers of flight in the open air. He thus describes the pretty termination of his schooling:—"I had carried it through two or three rooms lying on the palm of my hand,

and had just passed the threshold of the house-door, and was in the act of stroking its head with my fingers, when, upon the swifts screaming in the air, it suddenly sprang out of my hand, and flew low round the carriage drive, as it had been accustomed to fly round the room, and passing over my head as it came round, it rose high in the air to join the wild swifts, and was never seen by us again. Three days after, the swifts had all departed, and I make little doubt that in less than a week after its vain attempts to surmount Johnson's dictionary, my young friend was flying sky-high in the heart of Africa." The poor little bird had vainly endeavoured to climb some quarto volumes, by which it was penned in.

There are many foreign varieties of this family, both in the New and Old Worlds.

The word translated "swallow" in the 84th Psalm, and again in Proverbs xxvi., denotes freedom and deliverance; and as it evidently points to some bird, it probably refers to the free manner in which the swallow flies. In the 9th chapter of Jeremiah this bird is again mentioned, and reference made to its migratory habits, which must have been well known, even at that time, and is referred to in many parts of the Bible: "Yea, the stork in the heaven knoweth

her appointed times ; and the turtle and the crane and the *swallow* observe the time of their coming." No particular species is named by the sacred writers.

ORDER PASSERES.—SUB-ORDER CONIROSTRES.

PYRGITA DOMESTICA.—The Sparrow.

This familiar little bird is nearly six inches in length, and of a robust form ; the bill is dusky, the head and back part of the neck ash-grey, the throat and round the eyes black ; the breast and under parts pale ash-colour, the back and wing-coverts reddish-brown mixed with black, the tail brown and rather forked ; the plumage of the female is plainer than that of the male bird ; she lays five or six eggs, of a reddish-white, spotted with brown ; the nest is built under the eaves of houses, in holes of walls, etc. ; there are generally three broods in a year. The partiality shown by the sparrow for the neighbourhood of man, renders it one of our best-known birds, and, though not of showy plumage, it is far prettier and more varied in colour than would be imagined by those who have only made its acquaintance amidst the smoke of a large town. Sparrows are extremely

voracious, and Buffon says they will destroy about 4000 caterpillars weekly, in feeding their young, which certainly well repays the slight damage they may do to the field and garden from their love for grain and seeds.

There is a pretty anecdote related in the 'Zoological Journal,' respecting these somewhat despised little birds, which evinces much fondness for their offspring, and a change of habit to suit a particular circumstance, which would be very remarkable were it not of such frequent occurrence. "A few years since, a pair of sparrows which had built in a thatched roof of a house at Poole, were observed to continue their regular visits to the nest long after the time when the young birds take flight. This unusual circumstance continued throughout the year, and in the winter, a gentleman who had all along observed them, determined on investigating the cause. He therefore mounted a ladder; and found one of the young ones detained a prisoner, by means of a piece of string or worsted, which formed part of the nest, having become accidentally twisted round its leg. Being thus incapacitated for procuring its own sustenance, it had been fed by the continued exertions of its parents."

Mr. Waterton thus describes the Solitary Sparrow (*Passer solitarius*):—"The bird to which David compares himself,

Psalm cii., is a thrush in size, in shape, in habits, and in song; with this difference, that it is remarkable throughout all the East, for sitting solitary on the habitations of man. The first time I ever saw this lonely, plaintive songster, was in going to hear mass in the magnificent church of the Jesuits at Rome. The dawn was just appearing, and the bird passed over my head, in its transit from the roof of the Palace Odescalchi to the church of the Twelve Apostles, singing as it flew. . . . It is, indeed, a solitary bird, for it never associates with any other, and only with its own mate at breeding time; and even then it is often seen quite alone upon the house-top, where it warbles in sweet and plaintive strains, and continues its song as it moves in easy flight from roof to roof. It lays five eggs, of a very pale blue. The bird itself is blue, with black wings and tail; the blue of the body becoming lighter when placed in different attitudes."

The sparrow is mentioned twice in the Psalms, and the original Hebrew word *tzippor* occurs very frequently in the Scriptures, but is elsewhere translated "bird" or "fowl;" it has both a general and definite signification, and it is not very easy to determine which is intended. In Psalm lxxxiv., the restricted sense is doubtless the true one, as it agrees with the habit of the sparrow. "Yea, the sparrow hath found

an house, and the swallow a nest for herself, where she may lay her young, even thine altars, O Lord of Hosts, my king and my God;" for though this passage need not be taken in its literal sense, yet the birds in the East being less exposed to molestation than in our country, they, in all probability, were allowed to, and did, build their nests in the beams and rafters of the sacred buildings. In Psalm cii., where the same Hebrew word occurs, the general signification would suit the sense much better, and consequently many commentators substitute "solitary bird," or "bird alone," for "sparrow" in the following verse: "I watch and am as a *bird alone* upon the house-top."

CORVUS CORAX.—The Raven.

The original Hebrew word translated "raven," is "*oreb*," which might be construed "the bird of night," a name which it probably derived from its sable plumage. "A word of the same origin is extended by the Arabian writers to the rook, crow, and jackdaw, as well as to the raven; in fact, it seems to include all those species which are by Cuvier ranged under the genus *Corvus*. The predominant colour of these is black; hence '*Ereb*' (the origin of the classic *Erebus*), implying a sable hue, is a very proper word as a generic appellation, corresponding to *Corvus*."

The characteristics of the *Corvidæ* are a strong, compressed bill, covered at the base with stiff feathers; the form of the foot enabling them to traverse fields with facility in search of food, whilst they can also perch with security on trees; the wings broad, and moderately long; the length of the tail varying in the different species; the sight very keen; and the colour of their plumage generally dark but lustrous.

The common Crow (*Corvus corone*) is about eighteen inches long, and twenty-six in width; it has glossy, burnished feathers, nearly black in their general appearance; it lives principally in woods, builds on trees, laying five or six eggs; it feeds on putrid flesh, or on eggs, shell-fish, worms, and insects, also destroying weakly lambs, young rabbits, and chickens.

The Rook (*Corvus frugilegus*) has a nearly straight beak, of a bluish-black colour, with a portion of the skin at the base bare of feathers in the full-grown bird; the plumage is black, glossed with reflections of purple, violet, and blue. Rooks build on trees, the female laying four or five spotted eggs; their favourite food is the grub of the chafer or beetle, in destroying which they do good service to the farmer.

The Jackdaw (*Corvus monedula*).—In this species the head is black, the neck and back greyish-black; the wing-coverts black, glossed with violet: the under parts bluish-black. The jackdaw feeds on insects, worms, and various seeds; it builds chiefly in towns, ruins, and cliffs, laying five or six spotted eggs. These three species are very generally diffused, and were probably familiar to the sacred writers.

The Raven (*Corvus corax*) is the largest of the genus; its bill is strong and black, covered with hairs or bristles; the colour of the whole bird black, finely glossed with blue. It is a bold and sagacious bird, eating every animal substance that comes in its way, and often destroying rabbits, young ducks, and chickens, always commencing its repast on the eyes of the animal. This fact was well known in ancient times, as appears by the expression in Proverbs xxx., "The eye that mocketh at his father, and despiseth to obey his mother, the ravens of the valley shall pick it out, and the young eagles shall eat it." The female lays five or six eggs of a pale bluish-green, spotted with brown; the nest is placed in trees or in the holes of rocks. In Leviticus xi. the word *oreb*, translated "raven," may probably be taken in its general sense, and thus, "every *raven* after his kind" would include all those *Corvidæ* known to the Hebrews,

forbidding any one of the family to be used as food ; certainly the interdiction would in this case be no hardship, as the habits of the principal species do not recommend them for that purpose ; nor would they, under ordinary circumstances, be chosen as purveyors of food for man, but in 1 Kings xvii. we read that Elijah, when living in retirement near the brook Cherith, was fed by ravens: " And the ravens brought him bread and flesh in the morning, and bread and flesh in the evening." There have been various explanations of this passage, by those who see no reason for believing that any miracle was performed for the support of the prophet: the most probable is that which would substitute for " raven " the word " Arabians " (whose name is almost identical), or the inhabitants of some town called *Oreb*, " a raven : " we know there was a rock called by this name, and a town or village may have borne the same designation. The passage would have equal force, were either of these words substituted: " I have commanded " the Arabians, or the inhabitants of *Oreb*, " to feed thee there ; " and again, " The Arabians, " or " the inhabitants of *Oreb*, " " brought him bread and flesh in the morning, and bread and flesh in the evening ; " and we have no warrant for substituting a miraculous interposition, where so simple an expedient

would have equally effected the purpose of the prophet's nourishment, during his residence at the brook Cherith.

ORDER GALLINÆ.

PAVO.—The Peacock.

There are two species of this magnificent bird, *Pavo cristatus*, the common peacock, and *P. Javanicus*, the Javanese peacock. The former measures about four feet in length; the head is beautifully formed, and ornamented with a tuft composed of twenty-four feathers, of the most exquisite green, edged with gold; the head, throat, neck, and breast are of a deep blue, glossed with green and gold; the back, the same colour, tinged with bronze; the smaller wing-coverts are cream-colour, marked with black; the middle coverts, deep blue; the under parts are dusky; the tail greyish-brown, but it is concealed by the gorgeous train, which, when expanded, forms a superb fan, the shafts are white, and the end of each feather is extended into a flat surface, which is decorated with what is called the eye, a brilliant spot enamelled with the most lovely colours, green, yellow, blue, and bright violet, the centre being velvet-black.

“When pleased or delighted, the peacock erects his train and displays the majesty of his beauty: all his movements are full of dignity; his head and neck bend nobly back, his pace is slow and solemn, and he frequently turns slowly and gracefully round, as if to catch the sunbeams in every direction, and produce new colours of inconceivable richness.” These lovely plumes are shed every year, at which time the bird conceals himself as much as possible. The cry of the peacock is very harsh and discordant. The female is smaller than the male, her train is very short, and her whole plumage is of a light brown or cinereous colour: she lays four or five white spotted eggs, in some secret and sequestered place, concealing them from the male, who is very apt to break them. It is said that the hen, when in a state of nature, lays between twenty and thirty eggs; this evidently varies, however, according to climate, as in Greece ten or twelve is the usual number.

Pavo Javanicus is of about the same size as the common species; the tuft is longer, and it has a naked space on the cheeks, including the eyes and ears, which is coloured a light yellow, shading into green towards the fore part; the head and crest are bluish-green; the rest of the plumage is of a beautiful metallic brown, varied with blue and green;

the "eyes" on the train are deep purple in the centre, edged with green, brown, black, and lastly chestnut, all beautifully iridescent.

Though long naturalized in Europe, peacocks are originally from the East, being found in the vicinity of the Ganges, on the extensive plains of India, in Siam, and also in Africa.

"From the number of peacocks which are still found in India, especially in the richly wooded dells of the Western Ghauts, not a doubt can be entertained of India being the native country of these splendid birds. Some of the valleys they inhabit there, are peculiar and picturesque in a very high degree. There are often circular valleys, or, as one might almost call them, cauldrons, so narrow, that the eye of one standing on the brink can overlook their whole extent, so deep and so steep in the sides, that it is impossible to descend into them, and with the outlet so rough and so choked with vegetation, that a passage that way is equally difficult. In these singular places, peacocks may be often seen in swarms, and the brilliancy of their colours adds greatly to the other characters of these curious places. Of course they feed on the ground, in the openings between the trees; but the places of their repose, both when

resting for the day, and for sleeping at night, are on the topmost branches, where they make a very brilliant appearance*." They were brought into Greece about the time of Alexander, and to Rome during the decline of the republic, being then esteemed a great luxury for the table; it is not ascertained at what precise period they were introduced into this country.

Peacocks are mentioned in 1 Kings x. and 2 Chronicles ix., as amongst those productions brought by Solomon's fleet, "gold and silver, ivory, and apes, and peacocks;" and they were certainly well calculated, by their gorgeous beauty, to adorn the court of that magnificent king. The author of the book of Job also alludes to their beauty in the 39th chapter, "Gavest thou the goodly wings unto the peacocks?" Some commentators have thought that the parrot was intended by the word "*thukijim*," others, pheasants or sun-birds; but the majority are in favour of the peacock, and this interpretation is sanctioned by the ancient versions and Hebrew interpreters. Probably many other curious and interesting animals were brought to Solomon, who certainly evinced the superior wisdom with which he was endowed, by devoting it to the study of the works of that Being who

* British Cyclopædia.

made him to surpass "all the kings of the earth in riches and wisdom." All Solomon's works on natural history are lost, though sufficiently alluded-to to prove that such were written. Josephus says that he made every plant and living creature the subject of a parable.

"The peacock, the bird of Juno, was an ancient Pagan symbol, signifying the apotheosis of an empress, as we find from many of the old Roman coins and medals. The early Christians, accustomed to this interpretation, adopted it as a general emblem of the mortal changed for the immortal state; and with this signification we find the peacock, with outspread train, on the walls and ceilings of catacombs, the tombs of martyrs, and many of the sarcophagi, down to the fourth and fifth centuries. It is only in modern times that the peacock has become the emblem of worldly pride*."

GALLUS DOMESTICUS.—The Domestic Cock.

This well-known and very useful bird scarcely needs description; and, indeed, scarcely two can be found which resemble each other in form and plumage. The head is surmounted by a crimson fleshy substance, called a comb, and two pendulous bodies of the same nature, termed wattles, hang under the throat: the hen has a similar ex-

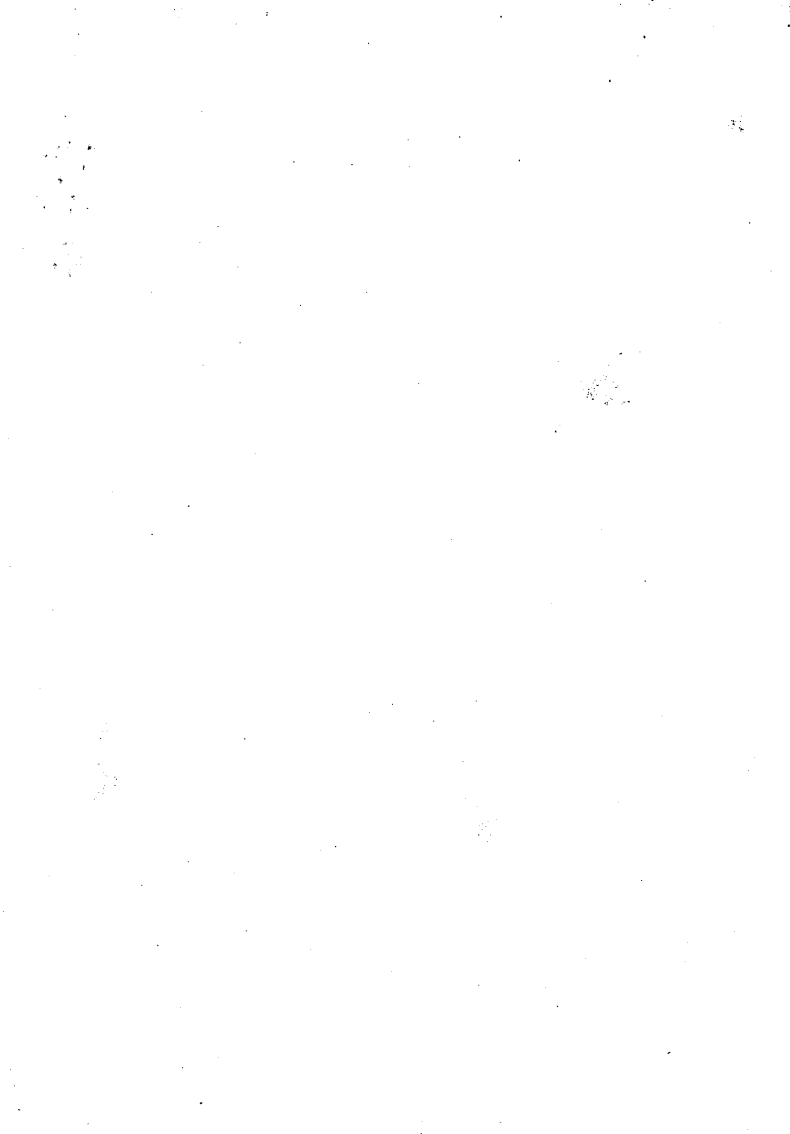
* Mrs. Jameson's 'Legendary Art.'

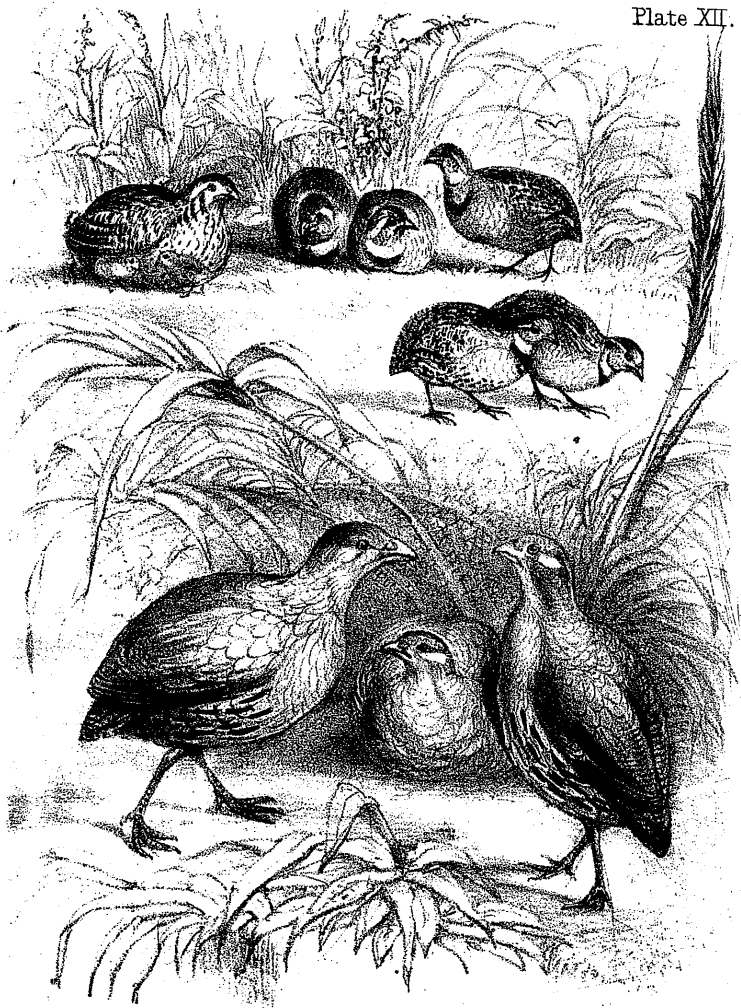
crecence, but much smaller, and less highly coloured. The plumage of the cock is always, except in the white breeds, much more splendid than that of the hen; it is infinitely varied, and in some specimens very rich and beautiful. The hen, if left to herself, makes a very rude nest: a hole scratched in the ground among bushes is all she requires; she generally lays from twelve to fifteen eggs, and in the process of hatching them is a model of patience, as she is of courage, when watching over the safety of her young brood, and labouring with untiring assiduity to provide them with sustenance. Even our Saviour thought this beautiful instance of solicitude not an unworthy simile for his tender anxiety in the fate of Jerusalem: "O Jerusalem, Jerusalem, thou that killest the prophets, and stonest them which are sent unto thee, how often would I have gathered thy children together, even as a hen gathereth her chickens under her wings, and ye would not."

The forests in many parts of India abound with this valuable bird, and it is supposed that the race was first domesticated in the East, and thence extended to the rest of the world; indeed, it seems pretty certain that it was introduced into Europe from Persia, but having been so long naturalized it is impossible to trace its progress. The

Greeks and Romans were well acquainted with this bird ; and Pliny says, "Next to the peacock, the birds which are most sensible to glory are those active sentinels which nature has produced to rouse us from our matin slumbers, and send us to our daily occupations. They do not suffer the day-beam to surprise us without timely warning ; their crowing announces the hour of morning, and the crowing itself is announced by the clapping of their wings. Each farm-yard has its peculiar king ; and amongst these monarchs, as amongst princes of our race, empire is the meed of victory."

Fowls are mentioned in 1 Kings iv. amongst the provision for the household of Solomon : "Ten fat oxen, and twenty oxen out of the pastures, and an hundred sheep, besides harts, and roebucks, and fallow-deer, and fatted fowl." This last expression shows that fowls were domesticated and reared purposely for consumption. The provision here mentioned appears enormous, until we have some knowledge of oriental courts, and the number of persons maintained in them. The daily consumption of food in the court of Cyrus was inscribed on a brazen pillar at Persepolis, and the principal items were as follow :—upwards of a thousand bushels of wheat ; the same of barley-meal ; four hundred sheep ; three hundred lambs ; one hundred oxen ; thirty horses ;





Quails.

Exodus. 16. 13.

Oriental Partridges.

Jeremiah. 17. 11.

thirty deer; four hundred geese; one hundred goslings; three hundred doves; six hundred various small birds; seventy-five gallons of fresh milk, and the same of sour; and nearly four thousand gallons of wine.

Every one will remember the mention of the cock in the 26th chapter of Matthew, "This night, before the cock crow, thou shalt deny me thrice;" and again, "And immediately the cock crew, and Peter remembered the word of Jesus, which said unto him, Before the cock crow, thou shalt deny me thrice; and he went out, and wept bitterly." This proves that these birds were kept in Jerusalem, though it is said that they were forbidden in the city, from a superstitious notion of their polluting the holy food (the peace and thank-offerings which were eaten there), by turning over dunghills, where creeping things and other pollutions might be discovered.

PERDIX.—The Partridge. (Plate XII. Oriental Partridges.)

The characters of this genus are a short, stout, and compressed bill, naked at the base, the upper mandible much curved towards the tip; the three front toes are united by membranes as far as the first joint; the tail is short, rounded, and drooping; the wings are also short. Part-

ridges are very numerous in the warm and temperate regions of the globe, living in pairs, principally in open tracts of country: their food consists of grain, bulbous roots, seeds, and insects: they make a whirring noise on the wing, but walk much more than they fly. The female lays her eggs on the ground, often in the slight hollow formed by the foot of an ox or horse, and slightly strewn with decayed leaves; the eggs are numerous, amounting, frequently, to more than twenty; upwards of thirty have been found in the nest of the English species.

The English Partridge (*Perdix cinerea*) is about thirteen inches long, of a brown-ash colour, mixed with black, each feather being streaked with buff; the chin, cheeks, and forehead are tawny; old birds have a bright scarlet spot of bare skin near the ear; the breast is marked with a chestnut crescent. This species is also found in the East.

The Red-legged Partridge (*Perdix rufus*) is larger than *P. cinerea*; the bill is red; the head greyish-brown in front, red-brown at the back; the chin and throat white, encircled with black, with a band of white over each eye; the back and wings are greyish-brown; the breast pale ash-colour; under parts of the body red; the sides marked with streaks of white, black, and orange. A variety of *P. saxatilis*.

The Greek Partridge (*Perdix saxatilis*) has the upper part of the body bluish-grey; the cheeks, throat, and upper part of the neck white, with a band of black; all the under parts are yellowish; tail ash-coloured, with five of the feathers on each side tipped with red. This bird generally lives among rocks, but descends into the plains to make its nest, and find sustenance for its brood. The partridge is called, in 1 Samuel xxvi., a bird of the mountains, which makes it probable that this species may be there alluded to. It will sit on the eggs of a stranger, like the domestic hen, and is often driven thence (according to Dr. Shaw) by the rightful owner, which may explain the text in Jeremiah xvii., "As the partridge sitteth on eggs, and hatcheth them not;" or, still more clearly, according to the marginal reading, "As the partridge gathereth young which she hath not brought forth."

All these species occur in the warm and temperate regions of Europe and Asia, the latter also in Nubia and Egypt, where they break into numerous varieties; the francolins also, which by some naturalists are included in the genus *Perdix*, and from which they differ very slightly, are abundant in similar localities, and either genus may furnish the allusions in the Scriptures. The Hebrew word signifies

the *caller*, and is very applicable to this tribe of birds, which are noted for their loud call.

“Whenever a dog or other formidable animal approaches the nest of a partridge, the hen practises every art to allure him from the site. She keeps at a little distance before him, feigning to be incapable of flight, and just hopping up, and falling down before him, but never advancing to such a distance as to discourage her pursuer. At length, having sufficiently misled him, she at once takes wing and disappears. The danger being over, and the dog withdrawn, she returns and finds her scattered brood, who immediately assemble at her call, and follow her. Corn-fields are the places that partridges most delight in, especially while the corn is growing, for that is a safe retreat, where they remain undisturbed, and under which they usually breed. They frequent the same fields after the corn is cut down, but with a different intent; for they then feed on such corn as has dropped from the ears, and find sufficient shelter under cover of the stalks*.”

COTURNIX.—The Quail. (Plate XII. *Coturnix vulgaris*.)

These little birds greatly resemble the partridge, but they are smaller, the bill more slender, no red mark over the

* Maunder's Treasury.

eye, and no spurs. The true quails are not found in America, but abound in Asia, Africa, and the southern parts of Europe; they are migratory birds, and are seen in prodigious flocks flying across the Mediterranean from Europe to Africa, in the autumn, and returning in the spring; they have sometimes appeared in such immense numbers at Naples, that a hundred thousand have been taken in a day, within four or five miles. And Bewick says, it appears probable that the quails which supplied the Israelites with food, were driven into the desert by a wind from the southwest, sweeping over Ethiopia and Egypt towards the shores of the Red Sea.

“These birds, as well as the way of taking and preparing them, must have been well known to the Israelites while in Egypt. At the proper season these migratory birds resorted to Egypt in such vast flocks, that even the dense population of Egypt was unable to consume them while fresh; but they salted and dried great quantities for future use. It is still the same in those countries: and modern travellers, on witnessing the incredible numbers of these birds, have expressed their conviction, that, as the text describes, such a suitable wind as the Almighty sent, could only have been necessary, in order to supply even the great

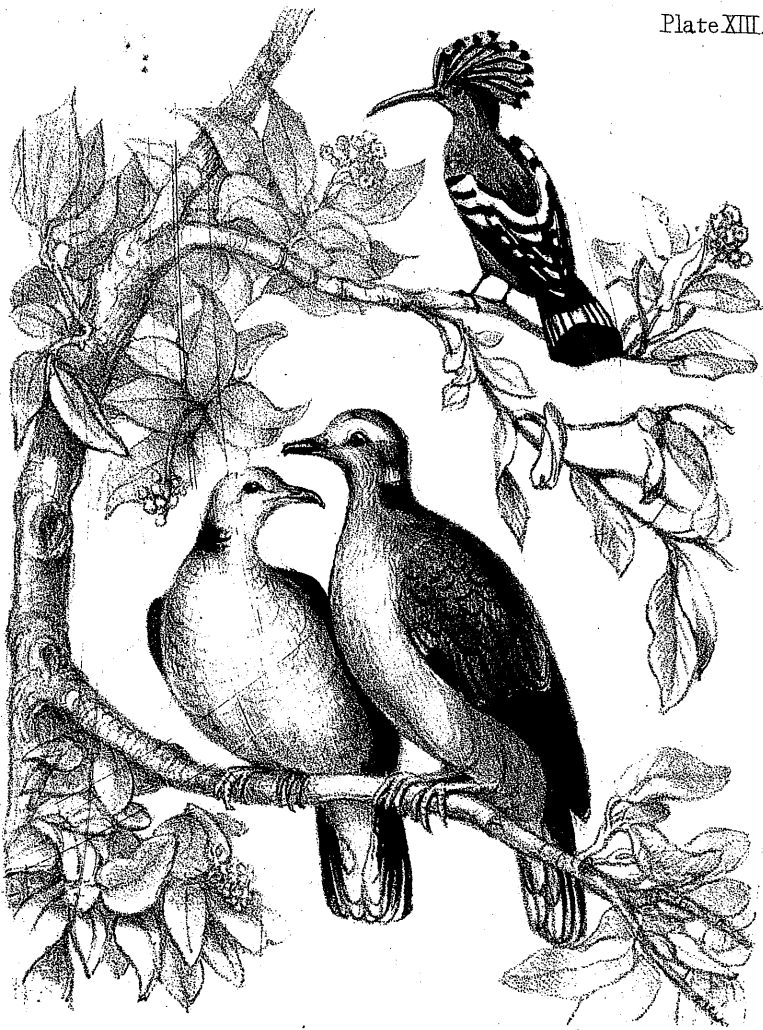
Hebrew host with a sufficient number of quails to last for a month."

The Common Quail (*Coturnix vulgaris*) measures about seven inches in length; the feathers of the head, neck, and back, are a mixture of ash, black, and brown; the neck and head are divided by a pale yellow line; the chin and throat are white, bounded by a black crescent; the breast is yellowish-red, spotted with black and streaked with yellow; the tail and wings are marked with rust-coloured bands; under parts yellowish-white. The plumage of the female is less vivid; she lays from eight to twelve eggs, of a yellowish colour, with dusky spots.

There are several other species, such as the Chinese Quail (*C. excalfactoria*), a beautiful little species, measuring only four inches, which is kept in cages in China, for the very singular purpose of warming the hands of the owners in winter. The New Holland Quail (*C. Australis*) and the White-throated Quail (*C. torquata*) differ but little in appearance and habits from *C. vulgaris*, which, in all probability, is the bird alluded to in Exodus xvi. and Numbers xi.

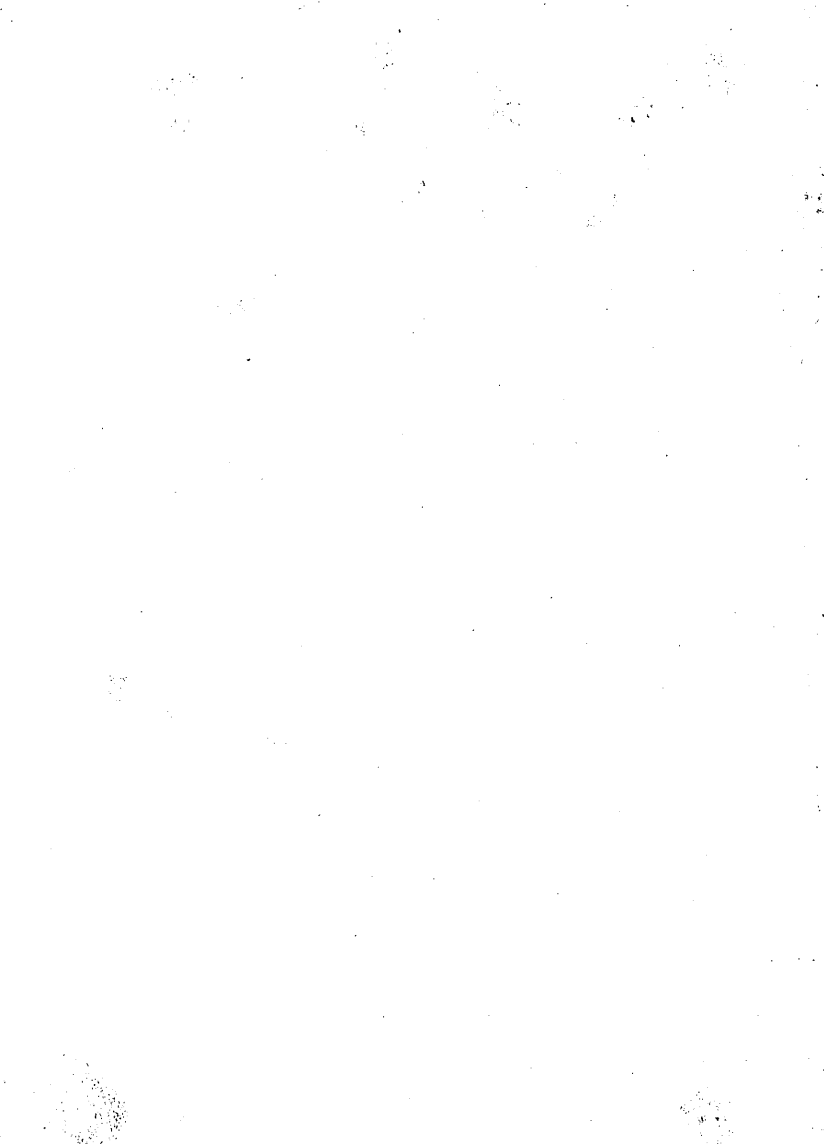
COLUMBA.—The Pigeon. (Plate XIII. *Turtur risorius*, the Syrian Dove.)

The form of this bird is in all its varieties very elegant:



Syrian Dove.
Genesis 8. 8.

Hoopoe.
Leviticus 11. 19.



the bill is weak, straight, slightly curved at the point, and has a soft protuberance at the base, in which are the nostrils; the legs are short, the toes perfectly divided. The sexes do not differ in plumage, which in *Tursus risorius* is of a delicate buff, ornamented with a black collar at the back of the neck. Pigeons are found in every climate, and, although they thrive best in warm countries, they will live in high northern latitudes. Their manners are particularly gentle; they are fond of society, faithful and affectionate to their mates, whom they caress with the most tender and graceful movements, and are the general emblem of peace and innocence. A pair belonging to the author's family were universally admired for their confiding familiarity and their extreme beauty.

Different species of pigeons and doves seem to be scattered over the whole of the torrid and temperate zones. It would be superfluous, and indeed impossible, in this little work, to enter into any minute description of the varieties, most of which seem to have descended from the stock-dove (*Columba Enas*), which is about fourteen inches in length; the head, neck, and back of a bluish-grey, glossed on the neck with green and gold; the breast pale reddish-purple; lower part of the back, and under parts of the body, light

grey or ash; wings barred with black; tail ash-grey, tipped with black. This bird builds in the hollows of decayed trees, and generally has two broods in the year; the male and female taking the office of incubation by turns. Wild pigeons migrate into England in large flocks at the approach of winter; from the northern regions, returning early in the spring; many also remain in this country.

The Hebrew word *yonah*, used in Genesis viii., is probably "a counterpart to *Columba*, the generic term for all the various kinds of doves with which we are acquainted." It would be very difficult to arrive at any conclusion with regard to the species intended in the various parts of Scripture, in which allusions are made to this interesting bird; in all probability no particular species is intended: "turtle-doves or young pigeons" are constantly named in Leviticus and elsewhere, as offerings in the religious ceremonies of the Jews; but in all cases the allusions are very vague.

In Psalm lv. is the beautiful expression—"Oh that I had wings like a dove, for then would I fly away and be at rest." This is in allusion to the rapidity and sustained power of flight so characteristic of this bird, the carrier pigeon having been known to fly forty miles in the short space of half an hour; and is almost equally applicable to

the whole genus. Virgil refers to this well-known trait in the following lines; and his mention of the dove, being, like that quoted above, poetical and not systematic, the species is no more defined than in the still more exquisite poetry of the Hebrew psalmist.

“In her nest within some cavern hung,
The dove sits trembling o’er her callow young,
Till roused at last, by some impetuous shock,
She starts surprised, and beats around the rock;
Then to the open fields for refuge flies,
And the free bird expatiates in the skies;
Her pinions poised, through liquid air she springs,
And smoothly glides, nor moves her levell’d wings.”

The next mention of our beautiful favourite is in the 68th Psalm, where the description may still apply to several of the Eastern specimens of this genus: “Though ye have lien among the pots, yet shall ye be as the wings of a dove covered with silver, and her feathers with yellow gold.” The plumage of many doves may well be compared to silver in its chaste elegance, and others have the lustrous brilliancy of gold; but this difficult text has had many different explanations, and some think the expression refers to a standard, bearing a dove as a symbol.

The Turtle Doves, which are mentioned in so many

places in the Bible, are a subdivision of the family; the species of the true turtle have the tails rounded at the extremity, and the plumage more simple than the pigeon; all the birds coming under the denomination of turtles are more delicate-looking, and their bills more slender; while, with the exception above named, the tail is longer and more wedge-shaped than that of the pigeon, in some species considerably so. The collared turtle is supposed to be the bird alluded to in Solomon's Song, and many particulars may be gleaned respecting it by an attentive perusal: that it was a migratory bird and a visitant only to very warm climates, may be gathered by the stanza, "Rise up, my love, my fair one, and come away; for lo, the winter is past, the rain is over and gone; the flowers appear on the earth; the time of singing is come, and the voice of the turtle is heard in our land." Also in Jeremiah viii. is another proof of their migratory habits: "Yea, the stork in the heaven knoweth her appointed times; and the turtle, and the crane, and the swallow, observe the time of their coming." Its voice is also frequently alluded to, as one of the joyful signs of the approach of summer; and that of the collared turtle is of a joyous nature, much resembling a short subdued laugh.

This bird is found throughout Africa as far south as the Cape, migrating into the south of Europe and Asia during the summer. Its length is about ten inches, its form light and delicate; the wings and tail long, the latter rounded at the end; the feathers on the upper part of the body are of a grey colour with a rosy tinge; the wing-coverts cream-colour; the head bluish-grey; the cheeks, neck, and breast, also grey, with a purplish shade; the tail ash-colour; and the neck adorned with a half-collar of black. Sometimes the plumage is entirely white.

The common turtle (*Columba Turtur*), likewise found in Asia, but migrating much further to the north than the last species, is rather larger; the upper parts are brown; the head and neck grey, the latter ornamented with a small patch of black on each side; throat, neck, and breast, tinged with red; the rest of the under parts white. This species visits England in April or May, when its plaintive and tender cooing may be heard in the thick woods where it makes its nest; the female lays only two eggs. *C. turtur* quits us again in August; the principal locality in which it is seen is Kent.

In Isaiah vi. we come to a somewhat obscure allusion to the multitude of doves sometimes seen, and which may

remind the reader of the passenger pigeons of America : "Who are these that fly as a cloud, and as the doves to their windows?" "This text has been well illustrated by Morier, in his 'Second Journey.' 'In the environs of the city (Ispahan) to the westward, near Zainderood, are many pigeon-houses, erected at a distance from habitations, for the purpose of collecting pigeons' dung for manure. They are large round towers, rather broader at the bottom than the top, and crowned by conical spiracles, through which the pigeons descend. Their interior resembles a honeycomb, pierced with a thousand holes, each of which forms a snug retreat for a nest. The extraordinary flights of pigeons which I have seen upon one of these dwellings afford, perhaps, a good illustration of the passage in Isaiah lx., 'Who are they that fly as a cloud,' etc. Their great numbers, and the compactness of their mass, literally looked like a cloud at a distance, and obscured the sun in their passage." What gives an additional value to this illustration, is the probability that similar dove-houses were in use among the Hebrews; for they certainly were so among their Egyptian neighbours, as we see by the ancient paintings, and in the mosaic pavement at Præneste, where the dove-cotes are such large round towers as Morier describes,

decreasing in diameter upwards, but without the conical spiracles which we find in those of Persia*.”

The prophet Ezekiel makes use of this gentle bird as a simile, in foretelling the desolation of Israel: “But they that escape of them shall escape, and shall be on the mountains like doves of the valleys, all of them mourning, every one for his iniquity.” The oriental doves harbour much in the trees round the cities, and even in courts of the houses; and as they would naturally quit a scene of war and confusion, for the quiet of the mountains, the comparison is very appropriate for the terrified inhabitants of a besieged city. The flight of doves, when alarmed, to the crevices of rocks and mountains, has been often alluded to by poets; thus Homer describes the flight of Diana from Juno, under the simile of a dove:

“So when the falcon wings her way above,
To the cleft cavern speeds the gentle dove,
Not fated yet to die.”

“The dove, in Christian art, is the emblem of the Holy Ghost, and besides its introduction into various subjects from the New Testament,—as the Annunciation, the Baptism, the Pentecost,—it is placed near certain saints, who

* Pictorial Bible.

are supposed to have been particularly inspired, as St. Gregory, St. Thomas Aquinas, St. Hilarius, and others. The dove is also a symbol of simplicity and purity of heart, and, as such, is introduced into pictures of female saints, and especially of the Madonna and child. It is also the emblem of the soul; in this sense it is seen issuing from the lips of dying martyrs, and is found in pictures of St. Eulalia of Merida, and of St. Scholastica, the sister of St. Benedict*."

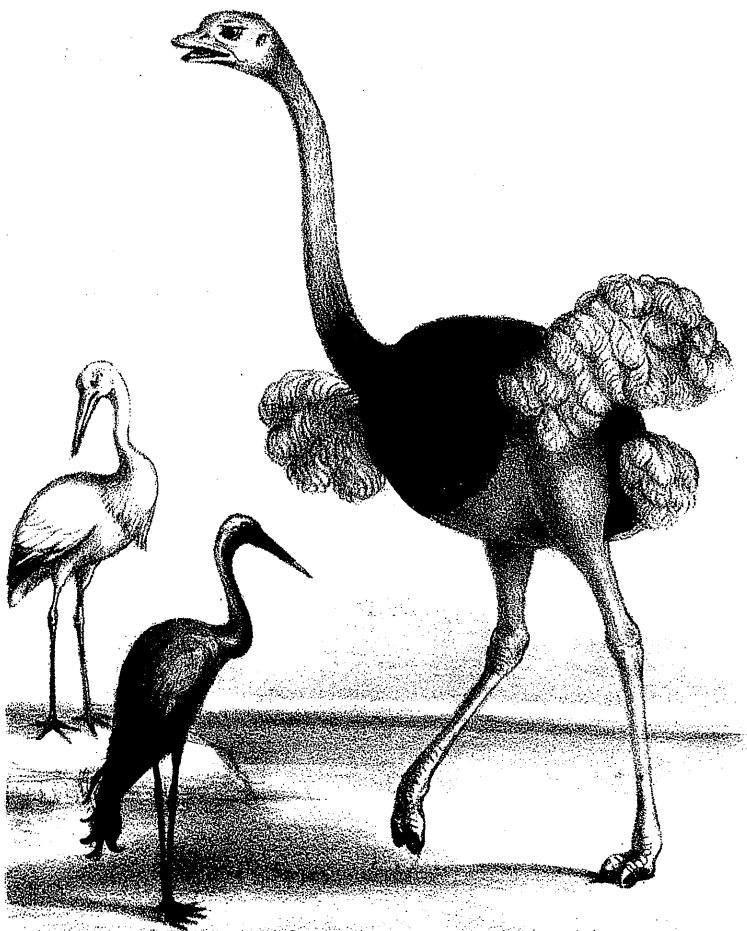
ORDER GRALLATORES.

STRUTHIO.—The Ostrich. (Plate XIV.)

This bird is distinguished by its wings being very little developed; they are well adapted to assist it in running, but are totally incapable of raising it in the air, as well by the different character of the plumage, as by their want of sufficient size and extension.

Struthio Camelus, the "Camel-bird," so called from the resemblance its form bears to that well-known animal, is seven or eight feet in height, measuring to the top of the head; the head is small, and, with the neck, is destitute of

* Mrs. Jameson's 'Legendary Art.'



Stork.

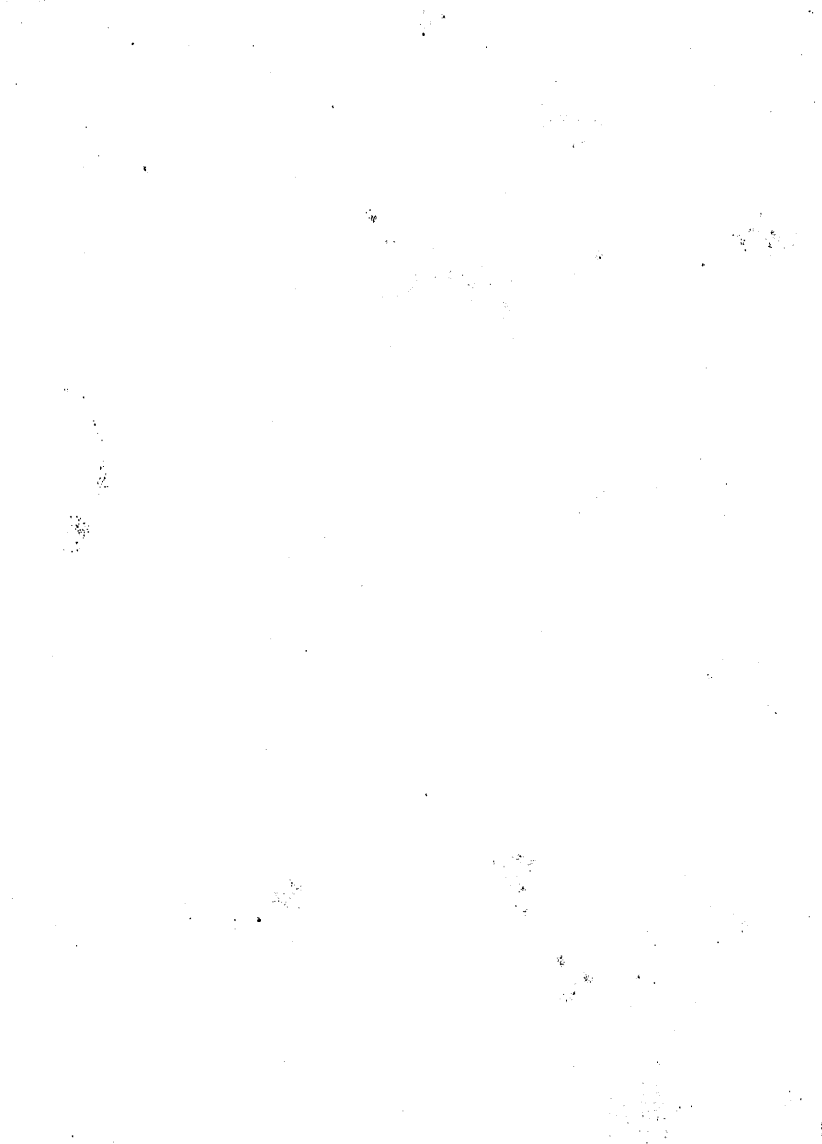
Crane

Leviticus. 11. 19.

Jeremiah, 8. 7.

Ostrich.

Job, 39. 13.



feathers; the thighs, also, are bare, and the legs hard and scaly; it has two very large toes of unequal size. The plumage of the male bird is black, that of the female dusky, with the exception of the wings and tail, which are in both cases white: the loose and flexible plumes of the former have been, from their great elegance, much prized in all ages as ornaments, and are still a valuable article of commerce.

The hunting of the ostrich is extremely arduous, as the bird surpasses in swiftness the fleetest horse, so that it easily "scorneth the horse and his rider;" but the mode adopted by the Arabians and Africans, is to continue the chase as long as possible, when a fresh man and horse take up the pursuit, until the poor bird is completely worn out. The female lays ten or twelve eggs in a hole in the sand, brooding over them during the night, and only leaving them during the extreme heat of the day, when her care and assiduity are not required. The author of the book of Job refers to this peculiarity, when he says, "Which leaveth her eggs in the earth, and warmeth them in dust, and forgetteth that the foot may crush them, or that the wild beast may break them;" but there seems less foundation than was formerly supposed, for the idea that the ostrich is as careless

of her young, as she is accused of being in the books of Job and Lamentations: "She is hardened against her young ones, as though they were not hers;" and again, "The daughter of my people is become cruel like the ostriches in the wilderness."

In procuring the eggs, the natives are obliged to be very careful in not touching with their hands those that are left, as the parent birds would be sure to discover it, and would not only desist from laying again in the same place, but would break all the remaining eggs; these eggs weigh about three pounds each, and are said to be a great delicacy. The ostrich feeds on grass, grain, etc., and is very voracious; it is common in the deserts of Arabia, and frequent allusions are made to it by Arabian poets.

"There are two names by which this bird is mentioned in Scripture—'*renonim*,' as in the present text (Job xxxix.), and frequently by the poetical designation of '*bath-hay-yannah*,' 'the daughter of screeching,' which has usually been rendered 'owl' in our version. This designation, doubtless, arose from the doleful noises made by the female ostrich in her native deserts, and which have been particularly noticed by various travellers*."

* Pictorial Bible.

GRUS CINEREA.—The Crane. (Plate XIV.)

The crane is a very noble bird, frequently measuring five feet in height; its form is slender, and its carriage erect; the bill is about four inches long, straight, compressed, and pointed; the forehead is covered with down, through which the skin appears red; the plumage is dark grey, variegated with black and light ash-colour; from the pinion of each wing arises a beautiful tuft of loose curling feathers, which hang gracefully over the tail, somewhat resembling, in their flexibility and texture, the plumes of an ostrich. The female lays two greyish-green eggs, spotted with brown; constructing its nest among the reeds and flags growing on the banks of streams and rivers.

The chief haunt of these birds is marshy places, and they formerly visited such localities in England, but have been driven away by the advance of civilization. In summer they spread themselves over the north of Europe and Asia, even to the Arctic circle, and in winter are found in Syria, Egypt, and India. During their migratory journeys, cranes soar very high in the air, taking bold and distant flights, during which their peculiar cry may frequently be heard, when the bird itself is beyond the gazer's ken. The unerring instinct shown by the crane in its migration, is celebrated in Jere-

miah viii. : "Yea, the stork in the heaven knoweth her appointed times ; and the turtle, and the *crane*, and the swallow observe the time of their coming."

ARDEA CINEREA.—The Heron.

This bird is only mentioned in Leviticus xi. and Deuteronomy xiv., and being named in both places without any characterizing additions, it is quite impossible to identify the species ; even the genus has been much disputed, though without coming to any more satisfactory conclusion. The original word *anaph* signifies to breathe short, as in anger ; and Ælian says the heron understood the human voice so perfectly, as to become angry when charged with idleness, by the ancient Egyptians, who employed this bird in fishing. "If this was true at the Exodus, the bird must have been familiarly known to the Israelites, and the probability is thus strengthened that the heron is really intended."

The heron is distinguished from the crane and stork, to which it is nearly allied, by its smaller size, its longer bill, and by the middle claw on each foot being serrated, thus affording a better hold on its slippery prey. The common heron is remarkably light in proportion to its size ; its length is more than three feet, its breadth five, yet it weighs little more than three pounds ; the bill is six inches long, straight

and pointed ; the plumage is a mixture of black, white, and grey, the wings and back being of the latter colour, the sides of the breast and body a deep black, which also spots the fore part of the neck, while parts of the head, neck, breast, and wings are pure white ; the head is adorned with a pendent crest of black feathers ; the female is destitute of this long crest, having only a short dusky plume, and her plumage is in general grey. She lays from four to six eggs, of a pale greenish-blue colour, the nest being built on trees, with sticks, and lined with grass, or wool. Herons reside on the banks of rivers and lakes, or in marshes ; their food consists of fishes, frogs, and field-mice, insects, snails, and worms ; they build in large societies. Herons inhabit Africa and Asia, migrating from the colder countries, but remaining stationary in temperate climates, such as England. There are numerous species and varieties of this bird, both in the eastern and western hemispheres.

The Great White Heron (*Herodias alba*) may be easily known from the common species, by its white plumage ; it is also rather smaller, the tail and legs longer, and it is destitute of a crest. This species is far less numerous ; though generally inhabiting the same countries, it is rarely seen in England.

The Night Heron (*Nycticorax griseus*) is also widely dispersed over Europe and Asia, as well as America.

The Purple-crested Heron (*Ardea purpurea*) is also found commonly in the west of Asia and north of Europe, but *Ardea cinerea* is probably the species referred to in the Scriptures.

The flesh of the heron was, according to our translation (Leviticus xi.), interdicted to the Hebrews; but it was formerly held in high estimation in England. The hawking of herons was also a great amusement of kings and nobles, on which account great care was taken to preserve the species: a fine of twenty shillings (a very heavy one in those days) was exacted for each egg destroyed.

Mr. Edwards, in his very interesting narrative of a 'Voyage up the Amazon,' mentions, among other large birds, various species of herons, meeting the eye of the traveller in every direction. "Upon the trees," he says, "were perched birds of every variety, which flew before our advance at short distances, in constantly increasing numbers, or curving, passed directly over us. Upon some topmost limb, the great blue heron, elsewhere shyest of the shy, sat curiously gazing at our approach. Near him, but lower down, herons, white as driven snow, some tall and majestic

as river Naiads, others small, and the pictures of grace, were quietly dozing after their morning's meal. Multitudes of night herons, with a loud quack, flew startled by; and now and then, but rarely, a boat-bill, with his long-plumed crest, would scud before us."

Mr. Waterton, in speaking of the destruction to fish, caused by the neighbourhood of a heronry, says, "I attribute the bad character which the heron has with us, for destroying fish, more to erroneous ideas, than to any well-authenticated proofs that it commits extensive depredations on our store-ponds. Under this impression, which certainly hitherto has not been to my disadvantage, I encourage this poor persecuted wader to come and take shelter here; and I am glad to see it build its nest in the trees which overhang the water, though carp, and tench, and many other sorts of fish are there in abundance. Close attention to its habits has convinced me that I have not done wrongly. Let us bear in mind that the heron can neither swim nor dive, wherefore the range of his depredations on the finny tribe must necessarily be very circumscribed. In the shallow water alone can it surprise the fish, and even there, when we see it standing motionless, and suppose it to be intent on striking some delicious perch or passing tench, it

is just as likely that it has waded into the pond to have a better opportunity of transfixing a water-rat lurking at the mouth of its hole, or of gobbling down some unfortunate frog which had taken refuge on the rush-grown margin of the pool."

BOTAURUS STELLARIS.—The Bittern.

This bird belongs to a subgenus of the heron family, living in woody swamps and marshes, and feeding on aquatic animals, frogs, lizards, and insects. The bittern is nearly as large as the common heron, but its body is more plump, and its legs stronger; the bill is strong at the base, straight, and tapering to an acute point; the head is covered with long black feathers; the neck-feathers are also long and loose, and the bird can raise or depress them at pleasure; the general colour of the plumage is a dull, pale yellow, the back and wings marked with black uneven lines and streaks; the tail is very short. The female is rather smaller than the male, her plumage not so bright, and the feathers on the neck shorter. She makes a rude nest, composed of withered stalks and leaves, laying from four to six eggs, of a greenish-white.

The bittern is a solitary bird, never seen on the wing in the day-time, but remaining concealed in the reeds and

rushes where it makes its habitation ; its cry, when flying at a vast height, and the hollow booming noise it makes during the night, are both very peculiar and remarkable. The habits of this bird are alluded to in Isaiah xiv., when speaking of the threatened destruction of Babylon, "I will also make it a possession for the bittern and pools of water, and I will sweep it with the besom of destruction, saith the Lord of Hosts;" and again in Zephaniah ii., in foretelling the destruction of Nineveh, "And flocks shall lie down in the midst of her, all the beasts of the nation : both the cormorant and the bittern shall lodge in the upper lintels of it, their voice shall sing in the windows."

And truly a more melancholy sound could hardly be heard in a deserted city, mingled with the howlings of the "beasts of the nations," than the voice of the bittern ; and "desolation" must indeed "be in the thresholds" when such were the inhabitants. Bitterns remain in England throughout the year, as well as in the temperate parts of Europe, but in severe climates they are migratory ; there are many species found both in hot and cold climates, all resembling the common one in its principal characteristics, but differing in size and colour. They were formerly much esteemed as food.

CICONIA.—The Stork. (Plate XIV.)

The White Stork (*Ciconia alba*) is upwards of three feet six inches long; the whole of the plumage is of a pure white, with the exception of the wings, which are black; the bill, seven inches in length, is of a fine red colour; the legs are also red; the neck is long and arched, the feathers near the breast pendulous.

This bird inhabits the warmer regions of the globe, but resorts to higher latitudes in order to hatch its young ("Yea, the stork in the heavens knoweth her appointed time," Jer. viii.); never, however, being found in summer farther north than Russia or Sweden, nor in winter farther south than Egypt, where it is constantly seen during that season. Before storks take their departure they assemble in large flocks, making a clattering noise, and appearing to be all bustle and consultation; but when they are actually about to leave, the whole body become silent, and move at once, generally in the night*."

The female lays from two to four white eggs, on which the male and female sit by turns; the large and compact nest is usually built on the tops of churches, temples, and lofty ruins, and in the East on the chimneys by which apartments

* Maunder's Treasury.

are ventilated : these are its usual and favourite resorts, but that it sometimes builds on trees, appears from the passage in the 104th Psalm, " As for the stork, the fir-trees are her house ;" and as the stork will build in any situation rather than on the ground, it is probable that it chooses high trees where its usual localities are wanting, which may often be the case in eastern countries, where the flat roofs are a part of the house much occupied by the family. Shaw says, that in Barbary the stork builds in the fir and other trees ; but these birds certainly prefer the neighbourhood of man, from whom they always receive protection, as they have for ages been considered sacred ; probably from their grave appearance, their usual selection of sacred buildings for their resort, and their tender affection, not only for their young, but for the old and feeble.

~ Among the ancients, to kill a stork was considered a great crime, sometimes even punished with death ; and at the present time, in Turkey, Persia, and Egypt, or in those parts of Europe to which they resort, any man would become an object of execration, who should injure one of these favoured birds, or destroy its nest, so much has its amiable and confiding disposition gained it the protection and esteem of man.

In Holland the stork is protected because it helps to check the increase of reptiles in the low and marshy lands; the Turks and Arabs treat it with great hospitality; in Constantinople the bird is so familiar, as to build in the streets. It is very common in Asia, and Shaw mentions having seen flights passing over Mount Carmel (in their migration from Egypt), which were a mile in breadth, and took three hours before they had all passed over the point of observation.

The food of storks consists of serpents, lizards, small fish, and many noxious reptiles. Probably its interdiction by Moses, as an article of diet for the Israelites (Leviticus xi.), was owing in a great measure to the nature of its food, which renders the flesh very rank and unpalatable; perhaps also blended with a regard for its services in clearing the land of such creatures, and the general esteem with which its character was viewed.

The original word, which our translators have rendered "stork," is "*chasidah*," a name indicative of pity and benignity, proving that the qualities of this bird were very early noticed and admired; it is particularly abundant in Egypt and the western parts of Asia, so that the Israelites had favourable opportunities of becoming acquainted with its peculiarities.

The Black Stork (*Ciconia nigra*) is not so large as the preceding species; its head, neck, wings, back, and tail, are of a dusky hue, glossed with green and purple; the under parts and breast, pure white; the beak, throat, and legs are deep red. This bird is not so common as the white stork, though inhabiting many parts of Europe; it frequents solitary places, thus differing from its relative; it also builds on trees, laying two or three eggs; its flesh is quite unfit for food. The American Stork (*Ciconia Maguari*) is very similar in plumage to the common white stork, but it is said to be very good food.

An interesting story is told of a white stork in the town of Delft, illustrative of the tender affection which these birds bear to their young. A fire broke out in the house on which a stork had built her nest, then containing young birds incapable of flight; the old stork, returning with some food, saw the danger to which they were exposed (the fire having nearly reached the nest), and made several efforts to save them, but finding this impracticable, the devoted mother at last spread her wings over her little ones, and in that endearing attitude, expired with them in the flames.

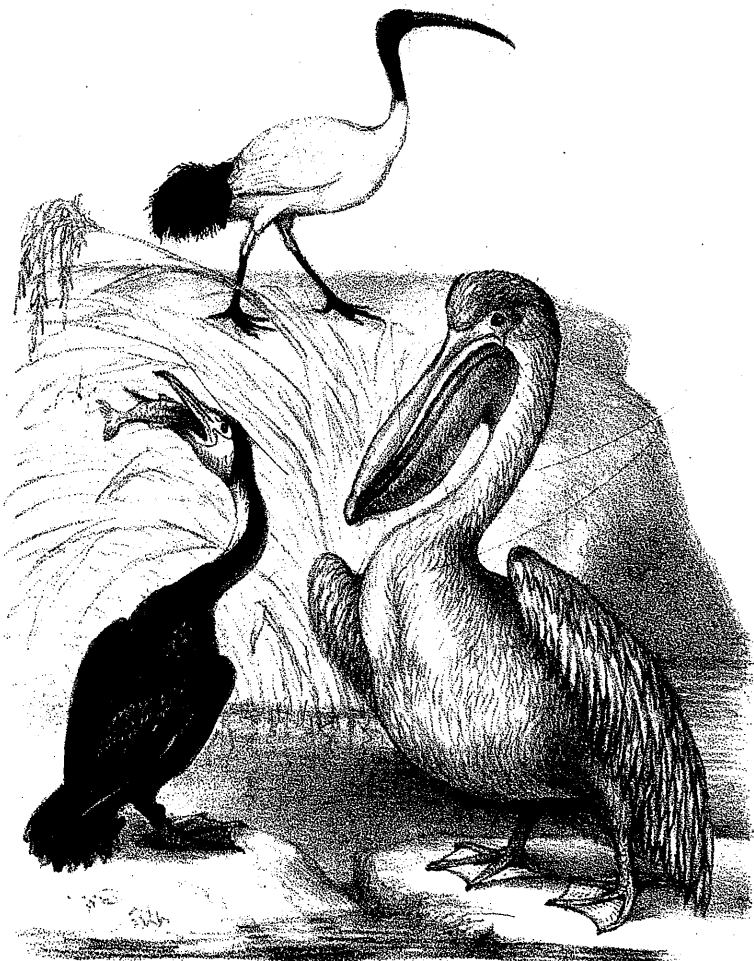
Dr. Herrmann says he has seen a stork play at hide-and-seek with a group of children, run its turn when touched,

and distinguish the child who was to pursue the rest, so well as to be, along with the rest, on its guard.

IBIS RELIGIOSA.—The White Ibis. (Plate XV.)

The genus *Ibis* closely resembles the stork in habits and in general conformation; the species chiefly inhabit warm countries, but, with the exception of the very cold regions, they are to be met with in most parts of the world. The beak is long, arched, thick at the base, but growing slender towards the tip, which is rounded; the head and throat are bare; the legs are long, the three front toes webbed as far as the first joint, the hind toe very long. The ibis frequents the banks of rivers and lakes, feeding on insects, mollusca, worms, and sometimes on vegetable substances: its flight is very lofty and powerful. There are various species.

The Glossy Ibis (*Ibis falcinellus*) is about two feet in length. The neck, breast, upper part of the back, and under parts of the body, are of a bright chestnut colour; the wing-coverts, tail, and remainder of the back, of a dusky green, glossed with purple and bronze. This species is seen in flocks of thirty or forty, on the banks of streams in Asia, where they build, migrating periodically to Egypt, and visiting Hungary, Turkey, Greece, and, very rarely, Switzerland, Holland and England.



Cormorant.
Leviticus 11.17.

Ibis.
Leviticus 11.17.

Pelican.
Psalm 102. 6.

The Scarlet Ibis (*Ibis rubra*) is a very handsome species, a native of the hottest parts of America, and, as its name imports, of a brilliant scarlet colour; other species are found in India, Africa, and Madagascar.

The White or Sacred Ibis (*Ibis religiosa*) is about the size of a common fowl; the head and neck are bare; the plumage principally white, marked with glossy black, an elegant plume adorns the hinder part of the body; the bill and feet are black. "This," says Cuvier, "is the most celebrated species; it was reared in the temples of ancient Egypt with veneration which approached to worship; and was embalmed after death,—as some said, because it devoured the serpents, which would otherwise have become dangerous to the country; according to others, because its plumage resembled some of the phases of the moon; finally, according to some, because its advent announced the rising of the Nile." Their mummies are found in the catacombs of ancient Memphis; and they are figured on Egyptian monuments. The sacred ibis is supposed by most commentators to be referred to, in Leviticus xi., under the name of "*yanshuph*," translated "great owl," and forbidden as food to the Israelites.

ORDER PALMIPEDES.

PELECANUS.—The Pelican. (Plate XV.)

This genus contains several large web-footed birds, residing on rivers, lakes, or the sea-coast, and feeding on fish. The bill is long, straight, broad and depressed, and furnished with a large pouch, capable of containing several fish, or a quantity of water amounting to twenty pints; the face and throat are bare; the legs short and strong; all the four toes webbed. Pelicans are gregarious, and the species are widely distributed, though not very numerous. Broderip says, that "in feeding their nestlings, the under mandible is pressed against the neck and breast, to assist the bird in disgorging the contents of the capacious pouch, and during this action, the red nail or hook on the upper mandible would appear to come in contact with the breast, thus laying the foundation, probably, for the fable, that the pelican nourishes her young with her blood."

The Common Pelican (*Pelecanus Onocrotalus*) has the plumage of a pure white, faintly tinged in parts with pale rose-colour; the pouch is bright yellow; the length of the bird is between five and six feet, expanse of the wings twelve or thirteen. About the middle of September flocks

of pelicans repair to Egypt, but during the summer months they take up their abode on the shores of the Black Sea and in Greece; very rarely they are seen in France, but never in England. They breed in marshy districts, making a large nest of aquatic plants, lined with soft grass; the eggs are two in number, white, and equally round at both ends; the female feeds her young with fish, that has been macerated in her pouch: they are distinguished from the parent birds by a prevalence of ash-colour in their plumage.

The pelican is mentioned amongst the forbidden birds in Leviticus xi., and again in Psalm cii. as an emblem of desolation, "I am like a pelican of the wilderness; I am like an owl of the desert," which agrees admirably with the well-known habits of the bird. Captain Flinders thus describes the pelicans which he saw while on his voyage of discovery, at "Terra Australis:"—"Flocks of the old birds were sitting on the beaches of the lagoon, and it appeared that the islands were their breeding-places; not only so, but from the number of bones and skeletons there scattered, it would seem that they had for ages been selected for the closing scene of their existence. Certainly none more likely to be free from disturbance of every kind, could have been chosen, than these islets in a hidden lagoon of an uninhabited island,

situate upon an unknown coast near the antipodes of Europe; nor can anything be more consonant to the feelings, if pelicans have any, than quietly to resign their breath, whilst surrounded by their progeny, and in the same spot where they first drew it." The beautiful poem of 'The Pelican Island,' by Montgomery, was founded on this passage.

In many places, pelicans are almost regarded as sacred birds; for instance, a correspondent of the 'Athenæum,' when travelling in Persia, speaks of "an immense flock of pelicans, which got up out of the reeds, and flew across our course, many passing quite close to the peak of our sail. One of our Greek servants, Yanni, a Cypriote, drew his pistol, to fire at them; but his arm was caught by an Arnout, who told him the bird was sacred, pelicans having brought water in their bill-pouches to Ali after a battle, when he lay on the desert faint with extreme heat and toil*."

"The pelican tearing open her breast to feed her young with her own blood, was an early symbol of our redemption through Christ: one or both of these emblems" (the pelican or the lamb) "are frequently found in ancient crosses and

* Maunder's Treasury.

crucifixes, the lamb at the top, the pelican at the foot of the cross*.”

STERNA HIRUNDO.—Common Tern, or Sea Swallow.

This bird is about fourteen inches in length; the bill is crimson tipped with black, and above two inches long; the neck, back, and wings are bluish-ash, the latter being very long, the under parts pure white; the breast slightly shaded; the long forked tail white; legs and feet red, the three front toes webbed; the forehead and top of the head deep black.

The tern is met with in many parts of Europe and Asia, and is common during summer on our sea-coasts, rivers, and lakes. The female makes her nest in the grass or moss near the water, laying three or four eggs, of an olive-colour, spotted with black. Wilson says, “The flight of the terns, and indeed of the whole tribe, is not in the sweeping, shooting manner of the land swallows, notwithstanding their name; the motions of their long wings are slower, and more in the manner of the gull. They have, however, great powers of wing, and strength in the muscles of the neck, which enable them to make such sudden and violent plunges, and that from a considerable height too, headlong on their prey.”

* Mrs. Jameson’s ‘Legendary Art.’

Terns feed principally on the fry of fishes, which they are very expert in twitching out of the shallow water. They leave the high rocks to the gulls, petrels, and other sea-birds, but abound on low sandy shores, frequently depositing their eggs on the bare sand, above high water-mark. During the day, the eggs are left to be hatched by the heat of the sun; but the birds are far from abandoning them. They are never far off, and the instant any one approaches they are in a state of great excitement, wheeling about in the air, and endeavouring, both by their voice and movements, to attract the attention of the visitor. "Indeed, if he walk along for some distance where the beach is favourable for them, he may have a guard of terns the whole way; for one pair hand over the traveller to another, and he continues to get well scolded until he is fairly out of the domain of the terns*."

There are several other species. The Black Tern (*Sterna nigra*) is occasionally seen in Britain, but differs little from the last in size and colour. The Roseate Tern (*S. Dougalli*) is found only by the sea, principally on the shores of the Baltic, rarely in Britain, and varies in plumage from *S. Hirundo*, by having a rosy tint on the neck and breast.

* British Cyclopædia.

The tern is believed by commentators to be intended under the name of "cuckoo" in Leviticus xi., as the original word "*shachaph*" denotes slenderness; and from both the Greek and Vulgate versions, it is supposed that a small kind of sea-fowl is meant. Some writers think that the sea-mew may be the bird alluded to.

PHALACROCORAX CARBO.—The Common Cormorant.

This bird varies in size from thirty inches to three feet in length, and above four feet in breadth with the wings extended; the bill measures four inches, and is of a dark colour; the tip of the upper mandible is much hooked, the lower compressed; the skin about the chin and neck is capable of distension, so as to form a kind of pouch; the eyes have a peculiar and remarkable stare, and there is a bare yellowish space round them. The top of the head and the neck are black, and the former has a short crest; the breast and all the under parts are black, glossed with green; the tail and legs black.

Cormorants may be found in every climate, usually assembling in large flocks, on the high rocks of the sea-shore, upon which the female constructs her nest, of seaweeds, sticks, and grass, laying four or five greenish-white eggs; they live on fish, which they catch with the greatest

dexterity, dropping down from a great height on their prey, diving with astonishing rapidity, and emerging with the fish across the bill. They toss it into the air with a peculiar jerk, and catching it head foremost, swallow the poor victim whole. In some places the cormorant moves inland, to lakes or large rivers, and in these situations is seen standing or nestling on trees.

These birds have been tamed in various countries, and trained to fish for the benefit of man; in England they were hoodwinked like falcons, and a leather thong placed round their necks, to prevent them swallowing the fish.

Mr. Waterton's description of these singular birds is so graphic and interesting that I shall present it to my readers.

"The cormorants," he observes, "often pay me a visit in the winter season; and could they but perceive that there is safety for them here, and great danger elsewhere, they would remain with me while the water is unfrozen. But they wander, unfortunately, through parts where protection is not afforded them; and, being outlandish birds in the eyes of the neighbouring gamekeepers, they are immediately shot at: those which find their way here, are so unconscious of danger, that, after they have spent a considerable portion of time in diving for fish, they will come and

preen their feathers on the terrace which rises from the water, within ten yards of the drawing-room windows.

“The cormorant may be justly styled the feathered terror of the finny tribe. His skill in diving is most admirable, and his success beyond belief: you may know him at a distance among a thousand water-fowl, by his upright neck, by his body being apparently half-immersed in water, and by his being perpetually in motion when not on land. While the ducks, teal, and widgeon are stationary on the pool, the cormorant is seen swimming to and fro ‘as if in quest of something.’ First raising his body perpendicularly, down he plunges into the deep; and after staying there a considerable time, he is seen to bring up a fish, which he invariably swallows head foremost. Sometimes half an hour elapses before he can manage to accommodate a large eel quietly in his stomach. You see him straining violently, with repeated efforts to gulp it; and when you fancy that the slippery mouthfull is successfully disposed of, all on a sudden the eel retrogrades upwards from its dismal sepulchre, struggling violently to escape. The cormorant swallows it again, and up again it comes, and shows its tail a foot or more out of its destroyer’s mouth. At length, worn out with ineffectual writhings and slidings, the eel is

gulped down into the cormorant's stomach for the last time, there to meet its dreaded and inevitable fate."

The flesh of this bird is very rank and offensive, and was prohibited as food to the Hebrews (Leviticus xi.). There are many species or varieties in different parts of the world, but their habits are everywhere the same. The cormorant is again mentioned by the prophets Isaiah and Zephaniah, in connection with the bittern, and as an emblem of desolation; but the marginal reading gives "pelican" as the more probable meaning, and the habits of the two birds are favourable to this interpretation.

CYGNUS.—The Swan.

The genus *Cygnus* is distinguished by the graceful and majestic appearance of the birds composing it, by their muscular power, and large size. The generic characters are, a beak of equal breadth throughout, depressed at the point; the neck very long and slender; the legs short, with the hind toe small and free, the rest webbed. Swans feed chiefly on the seeds and roots of aquatic plants, and on the grass which grows on the brink of the water; the plumage is alike in both sexes.

The Wild Swan (*Cygnus ferus*) is about four feet and a half long, the extent of the wings being above five feet; the

plumage is white, with a tinge of yellow on the head and neck; and the bill black. This bird is found in the northern parts of both the eastern and western continents. In severe winters they migrate to the south, and are seen on the shores of England and France, but do not reach the south of Europe, excepting very rarely: as soon as spring is felt they return northward to spend the summer, and rear their broods; great numbers being then found in all the Polar regions. During their migratory journeys they fly very high, to avoid the powerful falcons of the north; and as their weight and size is great for so lofty a flight, the swan almost invariably goes with the wind, halting if it be adverse; before a strong and favourable breeze, they advance at the rate of not less than one hundred miles an hour.

The female builds a large but rude nest, near the water; she lays from four to seven eggs, which are very thick and strong, of a rusty-brown colour, marked with white. The inhabitants of the northern regions eat the cygnets, and make considerable use of the skins of the full-grown birds, sewing them together, and thus forming strong and warm garments: the down, feathers, and quills are also of great value as articles of commerce.

The voice of the wild swan, in spite of the well-known

fable of its death-song, is harsh and unmusical; but there is a mournful tone and a depth of sound in it, which certainly gives it somewhat the expression of a dying lament.

The Mute or Tame Swan (*Cygnus olor*) differs from the last species in size and form, being shorter and thicker in proportion, but longer in the wings, as they measure upwards of seven feet; the bill is also red instead of black; and the plumage is more delicately white.

“This species cannot be strictly called domesticated; they are only, as it were, partly reclaimed from a state of nature, and invited by the friendly and protecting hand of man to decorate and embellish the artificial lakes and pools, which ornament his pleasure-grounds. On these, the swan cannot be accounted a captive; for he enjoys all the sweets of liberty. Placed there, as he is the largest of all British birds, so is he to the eye the most pleasing and elegant. ‘What in nature,’ exclaims Bewick, ‘can be more beautiful than the grassy-margined lake, hung round with the varied foliage of the grove, when contrasted with the pure resplendent whiteness of the majestic swan, wafted along with erected plumes by the gentle breeze, or floating; reflected on the glassy surface of the water, while he throws himself into numberless graceful attitudes, as if desirous of attract-

ing the admiration of the spectator! The tame swan is found in its wild state in the eastern countries of Europe and Asia*."

The Black Swan (*Cygnus atratus*) is principally of a deep black colour, as its name imports; the beak is red; it inhabits various parts of Australia; and the Swan River derives its name from the abundance of these birds. Their habits are but little known; their note is rather melodious, though of short continuance. This species has been lately introduced into England, and is no longer the "*rara avis*" it was formerly considered.

There are some smaller species in the tropical countries of Africa and America, bearing a great resemblance to geese, and they are by some authors considered and described as such.

The swan is mentioned in Leviticus xi. as the translation of the word "*tinshemeth*;" some commentators think the *Gallinula Porphyrio*, or purple water-hen, is intended. This beautiful bird abounds in the rice-fields of Lower Egypt, appearing in May and the following months, and sometimes breeding in the deserts; it is also found in the islands of the Levant. It is nearly eighteen inches long, and about

* Maunder's Treasury.

sixteen in height; the plumage deep blue, mingled with red. It feeds on grain, plants, and roots, and is partial to fruit and fish: the nest is placed in the thick herbage of flooded fields, and is composed of sticks and plants; the female lays three or four eggs. The Greeks and Romans tamed this interesting and beautiful bird, introducing it into their palaces and temples. There are various species, which are called Sultana hens by some writers: they belong to the order *Gallinidæ*.

Should the supposition be correct, that this bird is intended by the "swan" of Leviticus xi., still this latter bird is not excluded, as the Septuagint understands it to be the "gier eagle" mentioned immediately after; the signification pointing out some bird noted for its attachment to its young, for which quality the swan is particularly famed, as, notwithstanding its generally peaceful disposition, it will attack even man in their defence.

CLASS REPTILIA.

ORDER CHELONIA.

TESTUDO.—The Tortoise, or Turtle.

This genus of reptiles is distinguished by having the body enclosed in a double case or shell, which allows the head and neck, the tail and four limbs to protrude: they are quiet, harmless animals, almost unequalled for longevity, very slow in their movements, and obtuse in all their sensations. They generally inhabit the warmer regions of the earth, though many species will bear the cold of northern climates, where they pass the winter in a state of torpor. The genus is divided into land and aquatic animals, known by the respective names of *tortoises* and *turtles*; in the former the upper shell, or shield, is much more arched than in the latter, the flatter form of the turtle being suitable to movement in a liquid medium; the feet have also a different form, being more compressed, and somewhat like a paddle.

The Common or Greek Tortoise (*Testudo Græca*) is supposed to be a native of all the countries bordering on the Mediterranean: its usual length is six or eight inches, and the weight about forty-eight ounces when full grown; the upper shell is oval, extremely convex, and composed of thirteen middle pieces, and about twenty-five marginal ones, of a dark brown colour, varied with bands of yellow; the under shell is of a pale yellow or citron-colour, with a blackish zone on each side; the head is small; the eyes small and black, the mouth not extending beyond them; the legs are short; the feet rather broad, and the tail also short, and terminated by a pointed, horny tip.

There are many other species, differing in size, colour, and form; such as *Testudo geometrica*, a small species with a black shell, each scale adorned with yellow lines, radiating from the centre; and *Testudo Indica*, a very large species, found in the East Indies, the Indian Archipelago, etc. One of these animals, presented to the Zoological Society, measured in length four feet four inches, and weighed two hundred and eighty-five pounds; it had lived seventy-seven years at Port Louis in the Mauritius.

The Green or Edible Turtle (*Chelonia Midas*) is one of the largest species of the aquatic *Chelonæ*, measuring often

more than five feet in length, and weighing five or six hundred pounds; its colour is a dull pale brown, varied with darker markings. It is found on the coasts and islands of all the tropical regions, and in great abundance both in the East and West Indies.

These animals feed on a kind of grass which grows at the bottom of the sea, often called turtle-grass, and they are much esteemed for the delicacy of their flesh. They are usually taken at the Bahama Islands, by means of a small iron peg, fastened to the end of a long wooden staff. The natives are very expert at catching turtle, watching them as they return to and from their nests, and turning on their backs all they meet, as the poor animals have not the ability to rise, and are thus quite in the power of their destroyers. Sir J. Alexander calls the Island of Ascension "the headquarters of the finest turtle in the world;" and Mr. Darwin, in his 'Journal,' gives the following account of the method employed in catching them:—"I accompanied Captain Fitzroy to an island at the head of the Lagoon; the channel was exceedingly intricate, winding through fields of delicately-branched corals. We saw several turtles, and two boats were then employed in catching them. The method is rather curious: the water is so clear and shallow, that

although at first a turtle quickly dives out of sight, yet in a canoe or boat under sail, the pursuers, after no very long chase, come up to it. A man standing ready in the bows at this moment dashes through the water upon the turtle's back; then clinging with both hands by the shell of the neck, he is carried away till the animal becomes exhausted, and is secured. It was quite an interesting chase to see the two boats thus doubling about, and the men dashing into the water, trying to seize their prey."

The Imbricated or Hawksbill Turtle (*Chelonia imbricata*) is a native of the Asiatic and American seas, and is occasionally found in the Mediterranean. It measures about three feet in a general way, though specimens have been seen twice that size: the flesh is held in no estimation, but the plates of the shell are stronger, thicker, and clearer than in any other kind, and afford the valuable substance called *tortoise-shell*: the best is brought from the shores of the Spice Islands and New Guinea.

The female turtle deposits her eggs in the sand, on the shores of the sea and banks of rivers; there she hollows out a strong vaulted nest, thus giving the eggs (which amount to a hundred) the full benefit of the sun. The shell is solid, and the form nearly globular.

There are many other species, but these will suffice as examples.

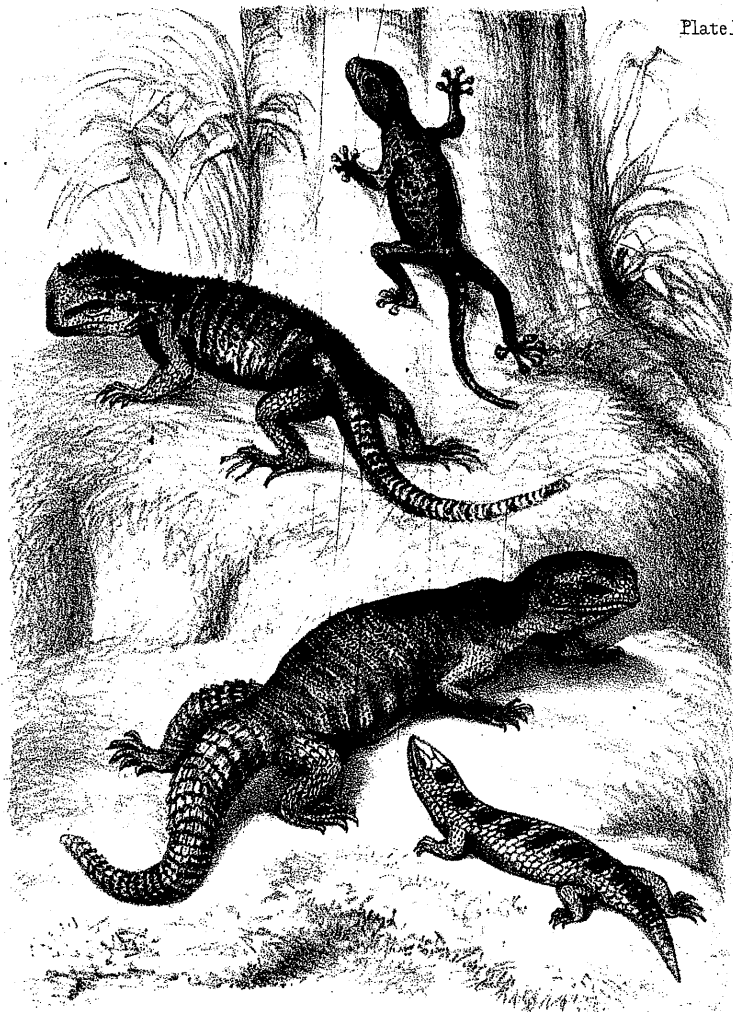
The habits of the tortoise in a state of domestication are amusingly described by Gilbert White, in his 'Natural History of Selborne:' "A land-tortoise, which has been kept for thirty years in a little walled court belonging to the house where I am now visiting, retires underground about the middle of November, and comes forth again about the middle of April. When it first appears in the spring it discovers very little inclination towards food, but in the height of summer grows voracious, and then, as the summer declines, its appetite declines, so that for the last six weeks in autumn it hardly eats at all. Milky plants, such as lettuces, dandelions, and sow-thistles, are its favourite dish." In a neighbouring village one was kept till, by tradition, it was supposed to be a hundred years old—an instance of vast longevity in such a poor reptile. In another letter he says, "On the 1st of November I remarked that the old tortoise began first to dig the ground in order to the forming of its hybernaculum, which it had fixed upon just beside a great tuft of hepaticas. It scrapes out the ground with its front feet, and throws it up, over its back, with its hind; but the motion of its legs is ridiculously slow, little exceeding

the hour-hand of a clock." The author mentions also the great aversion this animal showed to rain, which seems rather unaccountable, when it is remembered that the shell will bear the pressure of the wheel of a loaded cart. He bears testimony to the grateful disposition of the tortoise, "for, as soon as the good old lady comes in sight who has waited on it for more than thirty years, it hobbles towards its benefactress with awkward alacrity, but remains inattentive to strangers. Thus not only 'the ox knoweth his owner, and the ass his master's crib,' but the most abject reptile, and most torpid of beings, distinguishes the hand that feeds it, and is touched with feelings of gratitude."

In the author's family, one of these creatures, brought from the African coast by a relative, was domiciled for some years, and always made its winter residence in a warm slipper, which, after its wishes became apparent, was appropriated to its use, and lined with flannel. Several specimens were brought at the same time,—one, quite an infant tortoise, not two inches long,—but they none of them survived the second winter, with the exception of the one mentioned above.

"There are various opinions as to whether the word rendered *tortoise* in Leviticus xi. 29 really denotes that animal,





Lizards.
Leviticus II. 29. 30.

or a species of lizard. The original word '*tzab*' imports a swelling, and may have been applied to the *Stellio spinipes*, which has a swollen body: it is entirely of a beautiful green, with small spines on its thighs, and upon the ridge of the tail. It is found in the deserts about Egypt*."

The ferret, chameleon, lizard, snail, and mole of the next verse are all supposed by the best commentators to signify some species of lizard (Plate XVI.), and are thus described and explained in the valuable notes to the 'Pictorial Bible:'—

"The FERRET—'*Anaka*'—perhaps the *Lacerta gecko* of Hasselquist, or *Gecko lobatus* of Geoffrey, a species of lizard found in countries bordering the Mediterranean; it is of a reddish-grey, spotted with brown. It is thought in Cairo to poison the victuals over which it passes, and especially salt provisions, of which it is very fond. It has a voice resembling that of a frog, which is intimated by the Hebrew name, importing a sigh or groan.

"CHAMELEON—'*Coach*'—probably *Lacerta Scincus*, or *Scincus officinalis*? This is a species of lizard found in Arabia, Nubia, and Abyssinia. It is remarkable for the readiness with which it forces its way into the sand when pursued, a proof of its strength and activity, which seems to be inti-

* Pictorial Bible.

mated in the Hebrew name *coach*, force and prowess. There is another species of *Scincus*, *S. Cyprius*, which is of a very large size, and abounds in the Levant; it is green, with smooth scales. This was perhaps included under the common term *coach*.

“LIZARD—‘*Letaah*.’—The original word signifies to adhere, and may, therefore, very well apply to the *Gecko des murailles*, the *Stellio* of the Latins. It is a frightful animal, covered with tubercles, and of a grey colour. It lives in holes of the walls, and under stones, and covers itself with dirt, which is perhaps alluded to by the sense *adhering*, which the name conveys.

“SNAIL.—‘*Chomet*,’ in Chaldee, signifies to bow down; it therefore suggests the *Lacerta stellio*, which is noted for bowing its head, insomuch that the followers of Mahomet kill it, because they say it mimics them in the mode of repeating their prayers. It is about a foot in length, of an olive colour, shaded with black.

“MOLE.—‘*Tinshemeth*.’—As this word comes from a root signifying to breathe, we may apply it to the chameleon, which has lungs of such vast dimensions, that, when filled, the body is so much dilated as to appear transparent. The varying capacity of their lungs enables them, by exposing

a greater or less portion of blood to the influence of the air, to alter the tincture of the circulating fluid at pleasure, which when sent to the surface must tend to give a colour more or less vivid to the skin. The chameleon, or *Lacerta Africana*, is a native of Egypt, Barbary, and the south of Spain."

The *Lacertidæ*, or true Lizards, as well as the *Chamæleonidæ*, belong to the CLASS REPTILIA, Order SAURIA.

ORDER OPHIDIA.

VIPERA.—The Viper.

A genus, or rather family, of poisonous serpents, which have poison-fangs, but no other teeth. The family is divided into four sections: the first have the scales of the head of nearly the same size and character as those on the upper part of the body; the second have plates on the top of the head, but the poison-fangs apart, like the former; the third have the tail flattened for swimming; the fourth have the fangs in the same row with other teeth, but larger. The *Viperæ*, or vipers, properly so called, belong to the first section.

The *shephiphon*, translated *adder* in Genesis xlix., "Dan shall be a serpent by the way, an adder in the path," is supposed to be the *Vipera* or *Coluber cerastes*, the horned viper, which measures generally less than two feet; it is distinguished by a small horn or protuberance over each eye, and is remarkable for lurking in the sand, and biting the heels of horses, causing immediate torpidity in the legs. The grey colour of these reptiles renders them difficult to be distinguished from the sand, in which they conceal themselves; thus adding to the danger, and verifying the latter part of the same verse, "that biteth the horse's heels, so that his rider falleth backwards."

The Adder is a species of the same genus, and the word is frequently used indiscriminately with viper. In the 104th Psalm the original word which is there rendered *adder* occurs for the only time, and it is of course difficult to determine precisely what species is alluded to. The proper meaning of the original word *akshub* is, coiling or bending back; but this action is common to most serpents, and in all probability no one species is meant, as the expression "Adders' poison is under their lips" may be equally applied to a variety of venomous serpents. In the 58th Psalm, the word *adder* also occurs, but the marginal

reading gives the word *asp*, which in the notes to Job xx.* , where the term occurs twice, is thus described :—"The word in the original is *pethen*, and very probably denotes the aspic of antiquity; the ancient writers, however, make mention of it in so loose and indefinite a manner, that it is, perhaps, not easy to determine the species: in name and description, it agrees best with the *pethen* of the Hebrews; and the aspic of profane antiquity is the *bætan* of the Arabians. It is poisonous in the highest degree: the body of the sufferer swells, and death almost immediately ensues. The literati of Cyprus regarded it as the ancient aspic; the common people call it *kufi* (deaf), and in Psalm lviii. we actually find deafness ascribed to the *pethen*—'Like the deaf adder, that stoppeth her ears.' The *bætan* is about a foot in length, and two inches in circumference; its colour is black and white. In the same chapter and 16th verse, the *viper* is named, the Hebrew word being *ephah*, and it seems probable that it denotes the same serpent which is known in Arabia by the name of *El Effah*, and is remarkable for its subtle poison; it is about two feet long, and as thick as a man's arm, beautifully spotted with brown and yellow. The mouth is very wide, and the animal inhales a great quantity

* Pictorial Bible.

of air, again ejecting it with such force as to be heard at a great distance." Captain Riley, in his 'Authentic Narrative,' describes the colours of this serpent as "the most beautiful in nature."

Some naturalists consider the *Coluber aspis*, or asp of antiquity, to be that to which the Arabs give the name of El Haji, it is of a green colour, marked obliquely with brown bands, and measuring from three to five feet in length; the asp is celebrated in history as the instrument by which Cleopatra destroyed herself, after the defeat of Antony at the battle of Actium. Lord Bacon says that its bite is the least painful kind of death, and supposes its poison to have some affinity to opium. The *cockatrice*, mentioned in Isaiah xi., 'And the sucking child shall play on the hole of the asp, and the weaned child shall put its hand on the cockatrice' den,' is still supposed to be the adder. The viper is again named in Acts xxviii., when St. Paul, on being cast on the island of Melita (Malta), was bitten by one; both Jews and heathens considered serpents to be often the agents of God's punishments, and the natives of Melita believed from this accident that Paul was a murderer, "whom, though he hath escaped the sea, yet vengeance suffereth not to live." The Talmud relates the story of a man,

who, having killed his friend, was immediately bitten by a serpent and died.

With regard to the "fiery serpents" mentioned in Numbers xxi., it is much disputed whether the word *seraphim*, or *fiery*, is given them from their brilliant appearance, or from the agony caused by their bites; the Septuagint translated the phrase "deadly serpent," and the Arabic version of the Pentateuch has "serpents of burning bites," both of which favour the latter opinion. In Deuteronomy viii. the country through which the Israelites passed is described as "the great and terrible wilderness, wherein were fiery serpents and scorpions and drought, where there was no water." Burckhardt mentions the extraordinary number of serpents found in the same region to this day, but unfortunately does not name the species. He says, "Ayd told me that serpents were very common in these parts, that the fishermen were much afraid of them, and extinguished their fires in the evening before they went to sleep, because the light was known to attract them." As serpents, then, are so numerous on this side, they are probably not deficient towards the head of the gulf on the opposite shore, where it appears the Israelites passed when they journeyed from Mount Hor by the way of the Red Sea, to compass the land of Edom,

and where 'the Lord sent fiery serpents among the people.' Herodotus also mentions the extraordinary number of serpents existing in the same locality; but the superstition of the Hebrews naturally ascribed any appearance for which they could not account, to the peculiar and immediate interference of the Divine being, and thus frequently, from a simply natural cause, they inferred a miraculous intervention. The brazen serpent made by Moses, was afterwards worshipped by the Hebrews, till broken in pieces by command of Hezekiah. Serpent-worship was common in all the nations of antiquity, who derived it from Egypt, where the *Cerastes*, or horned serpent, was sacred to Ammon, and was interred after death in his temple. The serpent supposed to be the El Haji, also symbolized the 'good genius' among the Greeks and Romans, and they worshipped the healing power *Æsculapius* under the same figure. It is somewhat remarkable, that under all the modifications of serpent-worship, the serpent was made the deified symbol of something good and beneficent; the Egyptians regarded it as a symbol of 'the good god,' and probably the Israelites, with a recollection of its origin, looked on the brazen serpent as symbolical of the divine healing power, and as such resorted to it, and burned incense before it when afflicted with disease,

much in the same manner that the classical ancients resorted on similar occasions to the serpent symbol of the healing god *Æsculapius*.

“In all venomous serpents, there is a gland near the eye for secreting the poisonous fluid, which is conveyed in a small tube to the end of a fang, which in a state of rest reclines backwards along the margin of the jaw, and is covered by a fold of skin, but when used, it is erected by means of a small muscle. The poisonous fluid is inodorous, tasteless, and of a yellow colour; when the animal inflicts a wound, the pressure on the tooth forces a small drop of poison through the orifice of the tooth, which flows into the wound. The manner in which the blow is struck is as follows: the animal generally throws itself into a coil, more or less close, and the anterior part of the body is raised; the neck is bent somewhat abruptly backwards, and the head fixed almost horizontally; in an instant the head is, as it were, launched by a sudden effort towards the object of its anger, and the erected tooth struck into it with the velocity of thought. It is found by experience that the effect of subsequent wounds is greatly diminished, either by the diminution of the quantity of venom, or by the deterioration of its strength, so that if a venomous serpent be made fre-

quently to inflict wounds, without allowing sufficiently long intervals to elapse for it to recover its powers, each successive bite becomes less and less effective*. The situation of the poison, which is in a manner behind the upper lip, gives great propriety to the expression 'adders' poison is under their lips.' The usage of the Hebrew language renders it by no means improbable, that the fang itself is called a tongue in the same verse, 'they have sharpened their tongue like a serpent,' as a serpent might be said to sharpen its tongue when, in preparing to strike, it protruded its fang†."

There are so many allusions in the Bible to serpent-charming, that this slight notice would be incomplete without some allusion to a practice so well known, and early alluded to. In the 58th Psalm the following expression occurs, in speaking of the wicked, "They are like the deaf adder, that stoppeth her ear, which will not hearken to the voice of the charmer, charming never so wisely," or, as the marginal reading explains it, "be the charmer never so cunning;" in Ecclesiastes x., "Surely the serpent will bite, without enchantment;" and again in Jeremiah viii., "Behold, I will send serpents, cockatrices among you,

* Bell's 'British Reptiles.'

† Pictorial Bible.

which will not be charmed, and they shall bite you, saith the Lord."

Serpent-charmers were formerly, and generally still are, distinct tribes of men, in their different countries; the most famous charmers of antiquity were the Psylli, a people of Cyrenaica, whose power is attributed by Pliny to some particular odour in their persons, which was disliked by the serpent. Lucan was of the same opinion; and he describes the measures by which they cleared the Roman camp. When the encampment was marked out, they marched round, chanting their charms, the mystic sound of which, chased the serpents far away; not trusting, however, to this, they kept up large fires of different kinds of wood, the smell of which prevented the serpents from approaching; but if, in spite of these precautions, any soldier was bitten, the Psylli then exerted their powers to effect a cure. The measures they employed for this purpose are so well described in the following lines from Lucan's 'Pharsalia,' that they require no further illustration:—

"Then sudden he begins the magic song,
And rolls the numbers hasty o'er his tongue;
Swift he runs on, nor pauses once for breath,
To stop the progress of approaching death:

He fears the cure might suffer by delay,
And life be lost but for a moment's stay.
Thus oft, though deep within the veins it lies,
By magic numbers chased, the mischief flies;
But if it hear too slow—if still it stay,
And scorn the potent charmer to obey,
With forceful lips he fastens on the wound,
Drains out and spits the venom to the ground."

In this account the voice is alluded to, and it is to the *voice* of the charmer that the Psalmist refers. Mr. Roberts says that the following form of words is considered in India the most potent charm:—"O serpent, thou who art coiled in my path, get out of my way, for around thee are the mongoos, the porcupine, and the kite in his circles is ready to take thee."

The Egyptian charmer also employs vocal sounds, and a form of words, to draw these venomous creatures from their retreats. Mr. Lane says, "He assumes an air of mystery, strikes the wall with a palm-stick, whistles, makes a clucking sound with his tongue, and spits upon the ground, generally saying, 'I adjure ye by God, if ye are above, or if ye be below, that ye come forth; I adjure ye by the most great name, if ye be obedient, come forth, and if ye be disobedient, die! die! die!'" In these cases it is of course the

mere sound of the voice, the whistling and clucking, that is the effective part of the process.

Music is also much used, such as flutes, pipes, whistles, and drums, to lure the serpents from their retreats, and, when tamed, to induce them to dance, and perform movements regulated by its sound. It is not very difficult to believe that these creatures may be influenced by music, as well as many other animals, or that its proper regulation may have been rendered effectual by men who, for successive generations, have given the subject their attention. Sir William Jones enumerates, in the 'Asiatic Researches,' many instances of the effect of music on animals, and adds, "A learned native of India told me that he had frequently seen the most venomous and malignant snakes leave their holes on hearing notes from a flute, which, as he supposed, gave them peculiar delight."

There are, in spite of their pretensions, no well-authenticated proofs of the insensibility of these men to the poison of serpents; though they frequently allow themselves to be bitten, yet it is confessedly only by those snakes which have been deprived, wholly or in part, of their venomous powers by the extraction of the fangs: those in the natural state, which they certainly do handle at times very fearlessly, are

probably seized and held in a manner which prevents their biting, and this knack, acquired by long practice, will account for the many wonderful stories related; but when their readiness and presence of mind fail, they die as others, from the deadly bite. Roberts mentions an Indian serpent-charmer who came to a gentleman's house to exhibit his tame snakes: he was told that there was a cobra di capello in a cage, and asked if he could charm it; "Oh, yes," said the charmer, and the serpent was accordingly released from its cage; the man began his incantations, but the reptile fastened upon his arm, and he was dead before night. The serpent "would not hearken to the voice of the charmer." What an interesting confirmation is this of the truth of the text!

In the 'Missionary Magazine' for March, 1837, it is stated that some incredulous persons, after taking every precaution, sent a serpent-charmer into their garden. "The man began playing with his pipe, and proceeding from one part of the garden to another, for some minutes: he stopped at one part of the wall, much injured by age, and intimated that there was a serpent within." (This faculty of discovering serpents is attributed by Mr. Lane to their peculiar smell.) "He then played quicker, and his notes were louder, when

almost immediately a large cobra di capello put forth its head, and the man fearlessly ran to the spot, seized it by the neck, and drew it forth. He then showed its poison-fangs, and beat them out; afterwards it was taken to the room where his baskets were left, and deposited among the rest." Does not this explain what follows in the next verse — "Break their teeth, O God, in their mouth"?

"The mode of exhibiting these serpents, thus rendered harmless, is much the same everywhere: the *sap-wullah* (charmer) applies his pipe to his mouth, after placing several different kinds on the ground, and sends forth a few peculiar notes, on which all the serpents stop, as though enchanted; they then turn towards the charmer, approaching him within two or three feet, raise their heads from the ground, and bending backward and forward, keep time with the music; when that ceases, they drop their heads and remain quiet on the ground*." Other serpent-charmers allow large serpents to twine round their bodies, as if merely to show their perfect tameness, and the impunity with which they are able

"To dally with the crested worm,
To stroke his azure neck, or to receive
The lambent homage of his arrowy tongue."

* Pictorial Bible.

The serpent *El Haje*, or *Naia Haje*, has been much used by jugglers, who, by pressing the occiput, or hinder part of the head, can make it as stiff as a stick, thus alternately seeming a rod or a living serpent. Will not this faculty account for the apparent miracle performed by the Egyptian magicians, mentioned in Exodus? It is represented constantly in Egyptian paintings as an emblem of the protecting divinity, and as such is always placed on the portals of their temples; the power it has of erecting itself when alarmed or excited is probably the reason why the office of guardian was bestowed on it.

ORDER BATRACHIA.

RANA.—The Frog.

This well-known little animal is hatched from a gelatinous, transparent egg, one of a clustered mass deposited by the parent in March. In each of these eggs may be seen a small, round, black globule, which gradually takes the form of a tadpole, remaining for a month or five weeks enclosed in the jelly-like substance, enlarging in size, and during the last four or five days giving evident signs of movement.

When extricated from the gluten they feed on its remains, and on examination are now found to be furnished with a pair of branchiæ, which disappear after a certain time. These little creatures present an appearance so unlike frogs, that persons not conversant with natural history would with difficulty believe in their identity; they appear to consist simply of a round, black head, and a long, slender tail, bordered with a very broad, transparent margin. Their movements are remarkably lively and elegant, and to the microscopist tadpoles are a great source of interest, from the extreme beauty of the circulation of the blood, which can be distinctly seen with a good microscope. When they have reached the age of five or six weeks the hind legs appear, and are succeeded in about a fortnight by the fore legs; the animal now partakes of the appearance both of a frog and a lizard, but the tail continuing to decrease, becoming at length totally obliterated, the frog becomes perfect, and is seen on the banks of the waters in which, as a tadpole, it has hitherto existed. It now feeds on animal food, such as insects, snails, and worms, the structure of the tongue being particularly well calculated for securing the former prey, as it is very long, and the tip bifid and glutinous.

The muscular formation in the frog is very singular, and, in many respects, more nearly resembles that of man than any other animal. Mr. Broderip observes that "we find the rounded, elongated, conical thigh, the knee extending itself in the same direction with the thigh-bone, and a well-fashioned calf to the leg. It is impossible to watch the horizontal motions of a frog in the water, as it is impelled by its muscles and webbed feet, without being struck by the complete resemblance, in this portion of its frame, to human conformation, and the almost perfect identity of the movements of its lower extremities with those of a man making the same efforts in the same situation. By the aid of these well-developed lower limbs, and the prodigious power of their muscular and bony levers, a frog can raise itself in the air to twenty times its own height, and traverse, at a single bound, a space more than fifty times the length of its own body."

Frogs are very tenacious of life, and as they are about four years in coming to maturity, they probably would live to the age of twelve if their many enemies by land and water did not cut short their natural term of existence.

The common frog varies considerably in colour: the general tinge is olive-brown, spotted on the upper part of the

body and limbs with irregular blackish marks; the under parts are of a pale greenish-yellow; like all other species that are in the habit of casting their skins, there is much difference in the brightness and intensity of the colours at different times; the teeth are very small; the eyes large and brilliant; the ears are placed behind them, and covered by a membrane; the hind feet are strongly webbed, to aid the animal's progress in the water, to which it sometimes retires during the great heat of summer, and in the frosts of winter, when it lies in a torpid state buried in the soft mud at the bottom of stagnant waters.

The frog mentioned in Exodus viii. as having "covered the land of Egypt" is the *Rana punctata*, or dotted frog, its ashy-coloured surface being marked with green spots. The feet of this species are banded transversely, and the toes are separated half their length; it changes colour when alarmed; it is rare in Europe, though still very abundant in the Nile and other waters of Egypt. It was one of the sacred animals of the ancient Egyptians.

CLASS INSECTA.



ORDER COLEOPTERA.

COLEOPTERA,—Beetles.

The word *Coleoptera* signifies 'wings in a sheath;' the whole Order are produced from eggs, they then become grubs, afterwards change into chrysalides, and at length the perfect insect makes its appearance. The distinguishing characteristic of the Order is the conversion of the first pair of wings into elytra, or hard wing-cases, which completely enclose the second pair when the insect is at rest. The body is generally of an oval form, and the head is provided with two antennæ, composed of eight or ten pieces, with the extremities club-shaped; the eyes are large and prominent. The larvæ are soft, flexible, whitish worms, with the body divided into twelve rings, and a scaly head, armed with strong jaws; in this state they live in the earth, feeding on the

roots of vegetables, or decomposed animal matter: it is in this stage of their existence that many of the species prove so injurious to farmers and gardeners from their numbers and voracity. When about to change into the pupa state, they make an egg-shaped cocoon, from fragments of wood, etc., united by a glutinous fluid, which exudes from their bodies.

Though many tribes of beetles are enemies to vegetation, yet many more prove most serviceable to man in various ways. Such are the Tiger Beetles (*Cicindelidæ*), the Ground Beetles (*Carabidæ*), the Ladybirds (*Coccinellidæ*), and others which prey upon caterpillars, aphides, etc.; others, too numerous to mention, act the part of scavengers, removing carrion and other offensive refuse; many, also, clear the earth of the poisonous fungi which in a state of decay are so injurious and disagreeable to man; the properties and uses of the Blistering Beetles (*Cantharidæ*) are very well known.

In the expression made use of in Exodus viii., "I will send swarms of flies upon thee," great latitude is given to conjecture, as the word "flies" is not mentioned in the original, either in the 21st or in the succeeding verses. "The Hebrew word is *arôb*, which implies a mixture; the

Vulgate has translated it 'all sorts of flies,' and from thence our version 'swarms of flies,' where it is to be observed that 'flies,' in italics, is not in the original. We are left to conjecture what kind of fly is meant, or whether, indeed, the plague consisted in flies at all. The language of the 24th verse is remarkable, 'the land was corrupted by reason of the swarm,' which could hardly apply to any 'fly' properly so called. If also we refer to Psalm lxxviii., we see the *arob* is described as *devouring* the Egyptians, which is an act that seems inapplicable to a fly. Upon the whole, we strongly incline to the opinion which has found some able supporters of late years, that the Egyptian beetle (*Blatta Egyptiaca*) is denoted in this place. The beetle, which is almost everywhere a nuisance, is particularly abundant and offensive in Egypt, and all the circumstances which the Scripture in different places intimates concerning the *arob*, applies with much accuracy to this species. It devours everything that comes in its way, even clothes, books, and plants, and does not hesitate to inflict severe bites on man. If also we conceive that one object of these plagues was to chastise the Egyptians through their idols, there is no creature of its class which could be more fitly employed than this insect. What precise place it filled in the

religious system of that remarkable people, has never, we believe, been exactly determined; but that it occupied a considerable place among their sacred creatures, seems to be evinced by the fact, that there is scarcely any figure which occurs so frequently in Egyptian sculpture and painting. Visitors to the British Museum may satisfy themselves of this fact, and they will also observe a remarkable colossal figure of a beetle in greenish-coloured granite. Figures of beetles cut in green-coloured stone occur frequently in the ancient tombs of Egypt. They are generally plain; but some have hieroglyphic figures cut on their backs, and others have been found with human heads. The Egyptian beetle is about the size of the common beetle, and its general colour is also black; it is chiefly distinguished by having a broad white band upon the anterior margin of its oval corselet*.”

The word rendered “beetle” in Leviticus xi., in all probability referred to one of the locust family, as the description of those insects which alone were to be eaten, is much more applicable to that tribe of insects than to beetles, few of which have the power of leaping.

* Pictorial Bible.

ORDER ORTHOPTERA.

GRYLLUS MIGRATORIUS.—The Locust.

The family *Locustidæ* is distinguished from the remainder of the group (which includes the crickets and grasshoppers) by having the wings deflexed (bent down) and short antennæ: the former peculiarity separates it from the crickets (*Achetidæ*), and the latter from the grasshoppers (*Gryllidæ*). Modern naturalists also apply to them the term *Saltatoria*, on account of the leaping powers possessed by some of the species. They have coloured elytra, and large wings, placed when at rest in straight folds, covered by long narrow wing-cases; the antennæ are short; the feet have three joints; and the hind legs are long and very powerful, enabling the insect to take long leaps.

The most celebrated species is the Migratory Locust (*Gryllus migratorius* or *Locusta migratoria*), noted for its marvellous powers of destruction. It is generally of a brownish colour, varied with pale red, the legs of a bluish cast. There are many other species: one closely resembling *Gryllus migratorius* is frequently met with in South America, committing great ravages, but not comparable in numbers to the swarms of the eastern hemisphere.

Locusts often visit Poland and the south of Europe, and there have been instances of their reaching our shores, but the climate of England is happily not suited to their production. The female deposits her eggs in cylindrical burrows, several inches long, which may be easily found, as the aperture is not closed: these eggs are hatched the following year, when the weather is dry and hot; the number in each tube is about fifty, they are enclosed in a common envelope.

In Syria, Egypt, and the southern parts of Asia and Africa, this most destructive insect makes its appearance in vast swarms, not only bringing desolation and famine into the most fertile regions, by devouring every kind of vegetation, but causing the most fearful pestilence by the putrefaction of their dead bodies. Mr. Barrow states, in his 'Travels,' that in the southern parts of Africa the whole surface of the ground might literally be said to be covered by them, for an area of 1800 square miles. When driven into the sea by a north-west wind, they formed upon the shore, for fifty miles, a bank three or four feet high, and when the wind was south-east, the stench was so powerful as to be smelt at the distance of a hundred and fifty miles; the air, in short, became poisoned by their fetid exhalations.

Of the multitude of the incomplete larvæ which infested every part of Africa at that time, no adequate idea can be conceived, without having been an eye-witness.

As locusts fly in compact bodies, they are very much affected by the wind, and a strong gale will frequently disperse or destroy their devastating hosts. There is also an allusion to this in Psalm cix., "I am tossed up and down as the locust."

Mr. Barrow adds:—"The locusts had completely destroyed every green leaf and every blade of grass, and had not the insulated reeds of the river afforded subsistence for our cattle, our journey must have been ended for want of food. To the southward, where these swarms had already been, the traces of their route appeared as if the surface had been swept by a broom, or as if a harrow had been drawn over it. In coming to the first troop, the waggons, as usual, drove right through them, when they rose up on each side like a cloud, and the horses crossed the group in a gallop: those that escaped from being crushed immediately squatted down again. They swarmed in thousands into our tents, to devour the crumbs of bread that fell on the ground. The present year was the third of their continuance in this part of the colony; their last departure, with its result, is rather

singular, and it was confirmed by the inhabitants of the lower part of the colony. All the full-fledged insects were driven by a tempestuous north-west wind into the sea, and afterwards thrown back upon the beach, where they formed a bank three or four feet high, between the mouths of the Bosjemans river and the Becha."

St. Augustine mentions a visitation of this nature in Numidia and the adjacent countries, which produced so direful a pestilence as to destroy 800,000 people. Pliny tells us, that in some parts of Greece there were laws compelling the inhabitants to destroy these insects in the three states of egg, larva, and imago, or perfect insect, and in the isle of Lemnos each citizen was bound to supply a certain number of locusts annually, to keep down their numbers.

The first mention of the locust in the Bible is found in Exodus x., as one of the plagues inflicted on the land of Egypt: "And the Lord said unto Moses, Stretch out thine hand over the land of Egypt, for the locusts, that they may come up upon the land of Egypt, and eat every herb of the land;" and the terrible nature of this visitation may be gathered from numerous sources, both ancient and modern.

One example has already been given from a modern traveller; and, turning to the prophet Joel, the reader will

find the following powerful description of this scourge:—

“A nation is come up upon my land, strong, and without number, whose teeth are the teeth of a lion, and he hath the cheek-teeth of a great lion. He hath laid my vine waste, and barked my fig-tree; he hath made it clean bare, and cast it away, the branches thereof are made white.” And again, “The appearance of them is as the appearance of horses; and as horsemen, so shall they run. Like the noise of the chariots on the tops of mountains shall they leap, like the noise as of a flame of fire that devoureth the stubble, as a strong people set in battle array. Before their faces shall the people be pained; all faces shall gather blackness. They shall run like mighty men; they shall climb the wall like men of war, and they shall march every one on his way, and they shall not break their ranks*. Neither shall one thrust another; they shall walk every one in his path; and when they fall upon the sword, they shall not be wounded. They shall run to and fro in the city; they shall run upon the wall; they shall climb up upon the houses; they shall enter in at the windows like a thief.

* The running and walking here described, refers principally to the pupæ and larvæ of the insect, these modes of progression being adopted until they arrive at the state of maturity, when their wings are developed.

The earth shall quake before them; the heavens shall tremble; the sun and the moon shall be dark, and the stars shall withdraw their shining."

The description by almost any modern writer of the appearance and the destructive ravages of a swarm of locusts, would exactly illustrate, in most of the details, this fine metaphorical account of their approach; and a very slight consideration will show that an army of locusts was, in fact, even more to be dreaded than any other enemies. Volney, in his 'Travels in Egypt and Syria,' says, "Syria, as well as Egypt, Persia, and almost all the south of Asia, is subject to another calamity no less dreadful than earthquakes, I mean those *clouds* of locusts so often mentioned by travellers. The quantity of these insects is incredible to all who have not themselves witnessed their astonishing numbers: the whole earth is covered with them for the space of several leagues. The *noise* they make in browsing on the trees and herbage may be heard to a great distance, and resembles that of an army foraging in secret. The Tartars themselves are a less destructive enemy than these little animals; one would imagine that fire had followed their progress. Wherever their myriads spread, the verdure of the country disappears as if a covering had been removed;

trees and plants, stripped of their leaves, and reduced to their naked boughs and stems, cause the dreary image of winter to succeed in an instant to the rich scenery of spring. When these clouds of locusts take their flight to surmount any obstacle, or to traverse more rapidly a desert soil, *the heavens may be literally said to be obscured by them.*"

These last words are an ample comment on the expression, "The sun and the moon shall be dark, and the stars shall withdraw their shining." Many authors have also noticed a resemblance between these insects and the horse, particularly in the form of the head—"The appearance of them is as the appearance of horses;" and this expression may also refer to the strength and rapidity of their movements. Isaiah says, in speaking of the enemies of the church, "As the running to and fro of locusts, shall he run upon them," giving the same idea of swiftness. And in Revelation ix. there is another allusion to this apparent resemblance to the horse in appearance: "And the shapes of the locusts were like unto horses prepared unto battle; and the sound of their wings was as the sound of chariots of many horses running to battle."

By the law of Moses, locusts were permitted as food,—

“Even these of them ye may eat: the locust after his kind, and the bald locust after his kind, and the beetle after his kind, and the grasshopper after his kind;” and it is suggested, with great probability, that the four insects here named “indicate the four leading genera of the locust family, of which the domestic cricket, the mole cricket, the green grasshopper, and the locust, may be taken as representatives.” “The Israelites being in the Peninsula of Sinai, where they received this law, it is a remarkable fact that Burckhardt describes the present inhabitants of that peninsula, as the only Bedouins known to him, who do not use the locust as an article of food*.” In other parts of western Asia they are commonly eaten, and in many towns may be seen shops devoted exclusively to their sale. They are prepared by being thrown into boiling water mixed with salt; when taken out, the head, feet, and wings are picked off, and they are kept in sacks for use. Afterwards they may be broiled, stewed, or fried in butter; and though Europeans generally look upon them at first with repugnance, they are said to bear a great resemblance to shrimps or prawns. The reader will remember that these insects are mentioned as forming part of the food of John

* Pictorial Bible.

the Baptist while sojourning in the wilderness: "And his meat was locusts and wild honey."

The grasshopper mentioned in various parts of the Bible is supposed to be another species of locust, or to signify merely that insect in its larva state. In Leviticus it is named as an article of food, and this would apply to the locust rather than the grasshopper, or might refer to the larva of the former. In Ecclesiastes xii. the word again occurs, in a striking description of the infirmities of age, when even the grasshopper (or rather the locust, as being the smallest article of food used by the Hebrews) "shall be a burden." Some authors, instead of "the grasshopper shall be a burden," would translate this passage, "the locust is a burden to itself," thinking that the comparison of an aged person to a locust is meant. Dr. Smith says, "The dry, shrunk, shrivelled, scraggy old man, his backbone sticking out, his knees projecting forward, his arms backward, and his head downward, is not inaptly typified by that insect; and this is even still a common comparison in the East. The idea appears to have been also familiar to the classical ancients, for we find some engraved gems, in which an emaciated old man is evidently represented by a locust walking erect on its hind legs, and in which all

the characteristics enumerated above are brought out with singular effect." The fable of Tithonus, that, living to extreme old age, he was at last turned into a grasshopper, probably arose from this resemblance.

In Nahum iii. is the following verse: "Thy crowned are as the locusts, and thy captains as the great grasshoppers, which camp in the hedges in the cold day; but when the sun ariseth, they flee away, and their place is not known where they are." This description applies correctly to the larva of the locust; for the female locust lays her eggs under the shelter of a bush or hedge, therefore the young larvæ swarm "in the hedges" about the middle of April; and about the end of June, "when the sun ariseth, they flee away" (having attained their winged condition), and carry to other regions the desolation they have already caused in their immature state.

ORDER HYMENOPTERA.

FORMICA.—The Ant.

This interesting and well-known insect resembles the bees, in many of those particulars which distinguish them

from most other insects; for example, in having the larger part of their community composed of workers, or imperfect females, who seem to have the sole charge of the young brood; for though the parent ant lays the eggs, they are always under the superintendence of the workers, who regulate the degree of heat and moisture necessary for hatching them. When the young grubs appear, it is on these attentive nurses that the duty of feeding them devolves, which they do, either with their own half-digested food, or some peculiar fluid secreted for that purpose, and it seems probable that more than one of these kind foster-mothers is required for each larva. When the larvæ are full-grown, they enclose themselves in cocoons, in which they undergo the rest of their change; and the attachment of the workers to these cocoons is even greater than to the eggs or to the young larvæ. They may be seen bringing them out every fine morning, taking them in when the heat is too intense, sheltering them from rain, and, although only half the size of their nurslings, running with them as fleetly as if they had no weight whatever. Their love for these partially-developed young is so great, that they are said to invade other ant-hills, to carry off all the cocoons they can find.

The food of ants varies greatly : they are fond of sugar, gum, and all the sweet exudations of trees, but their staple food is animal matter, either those larvæ injurious to plants and trees, or small animals whose dead bodies would taint the air ; thus, like every other living creature whose habits are known, they are found to be beneficial to mankind, and to the animal creation in general. Many birds use them almost exclusively as food for their young : pheasants and partridges seem particularly fond of them, both in their mature and imperfect state. They are winged at one season only, and the female soon rids herself of these appendages, and seems inspired solely with the ambition of founding a nation. When the supply of food begins to fail, they seek their dwellings, and in the inmost recesses cluster together, passing the winter-season in a state of torpor. The working ants are always wingless, and the females destitute of a sting.

Proverbs vi. 6—"Go to the ant, thou sluggard, consider her ways and be wise ; which, having no guide, overseer, or ruler, provideth her meat in the summer, and gathereth her food in the harvest." The common opinion concerning ants laying up a store of corn for winter use, has arisen from the superficial observation, of which these interesting

little creatures had been the subject, until lately, when the researches of many eminent naturalists brought to light the fact that the supposed *grains of corn* which are brought out in the sunshine, and defended with so much care by these industrious insects, are really cocoons, containing the embryo ants, thus watched over by their careful nurses. This circumstance at first sight appears inconsistent with, and indeed contrary to, the text; but Messrs. Kirby and Spence endeavour to reconcile the difference in the following manner:—"Till the manners of exotic ants are more accurately explored, it would be rash to affirm that no ants have stores of provisions; for although during the cold of our winters in this country, they remain in a state of torpidity, having no need of food, yet in warmer regions, during the rainy season, when they are probably confined to their nest, a store of provisions may be necessary for them. Solomon's lesson to the sluggard has generally been adduced as a strong confirmation of the ancient opinion: it can, however, only relate to the species of a warm climate, the habits of which are probably different from those of a cold one, so that his words, as commonly interpreted, may be perfectly correct and consistent with nature, yet not be at all applicable to the species that are indigenous to Europe.

Solomon does not, however, affirm that the ant, which he proposes to the sluggard as an example, laid up in her magazine stores of grain : but that, with considerable prudence and foresight, she makes use of the proper season to collect a sufficient quantity of provisions for her purposes. She prepares her bread, and gathers her food, namely, such food as is suited to her, in summer and harvest, that is, when it is most plentiful : and thus shows her wisdom and prudence in using the advantages offered to her."

But for the reason above stated, namely, the difference in climate, this celebrated text may still be quite true, in its best understood sense, of the ants in tropical climates ; for Lieutenant-Colonel Sykes gives an account of the habits of an East-Indian species, which lays up a store of grass-seed in January and February, sufficient to last until the middle of the year : he found them employed, after the thunderstorms of October, in drying the remains of their store, which had been wetted by the rain.

It is probable that Solomon refers to no particular species of ant, for the whole family is noted for unwearied industry and perseverance, giving us an example of care in observing times and seasons ; of kindness, in the zeal and alacrity with which the overtasked are assisted ; of judgment, in the

exertions of each individual for the benefit of the community; and of wisdom, in the co-operation of numbers in a good and useful object: all these qualities show the value of the injunction "Go to the ant, thou sluggard, consider her ways and be wise."

The British species might be cited as sufficient examples, but those of Asia and Africa afford more wonderful proofs of persevering energy in rearing buildings, compared to which (when the relative size of the architect is considered), our most stupendous structures sink into insignificance. The mason ant constructs an earthen hillock, the interior of which exhibits labyrinths, lodges, vaults, and galleries, many of the nests having twenty stories above, and as many below ground, thus providing the inhabitants with warm or cool apartments, according to the weather.

The carpenter ants form their chambers and galleries in the trunks of trees; other species construct nests on the branches, varying in shape and dimensions; but the buildings erected by the *Termites*, or white ants of tropical climates, surpass all others in size and architectural wonders. These edifices are more than five hundred times the height of the builders, so that if our houses were built in the same proportion, they would be twelve or fourteen times the

height of the Monument, and four or five times that of the Pyramids, which we consider so marvellous a work. The interior is crowded with apartments, galleries, and magazines, a royal chamber for the queen, nurseries for the young, and food magazines. Many interesting particulars might be given of these little architects, whose history and economy resemble, in many respects, those of the bee and ant; but as they are not, properly speaking, ants at all (though erroneously so called), belonging even to a distinct order (*Neuroptera*), it is very uncertain whether they were alluded to in the text, more particularly as they are much more common in Africa than Asia, and might be unknown to the Royal Psalmist.

Some species of ant is even now very abundant in Palestine, for the traveller, Ali Bey, describes the road to Jaffa, from El Arisch, as, for three days' journey, one continued ant-hill.

APIS.—The Bee.

The species of this interesting and useful insect, referred to in the Bible, is probably the *Apis fasciata* of Latreille, as that is the common bee of Egypt and Asia Minor; but the habits of the genus are so similar, that a description of the most striking peculiarities in the *Apis mellifica*, or com-

mon hive-bee of Europe, will form an appropriate introduction to the notices in Scripture history.

One of the most striking peculiarities in these insects is the existence of those individuals which have been long regarded as, and called, neuters, but by more recent investigation are found to be imperfect females; these constitute the great mass of the population in every hive; to them is committed the internal economy of the society, and on them the whole labour of the community devolves. It is also their duty to guard and protect the queen, to feed the young, and to destroy the drones, or males, at the proper season.

“So work the honey-bees :

Creatures that, by a rule in nature, teach

The art of order to a peopled kingdom.

They have a king, and officers of sorts,

Where some, like magistrates, correct at home ;

Others, like merchants, venture trade abroad ;

Others, like soldiers, armed in their stings,

Make boot upon the summer's velvet buds,

Which pillage they with merry march bring home

To the tent-royal of their emperor,

Who, busied in his majesty, surveys

The singing masons building roofs of gold ;

The civil citizens kneading up the honey ;

The poor mechanic porters crowding in

Their heavy burdens at his narrow gate ;
The sad-eyed justice, with his surly hum,
Delivering o'er, to executors pale,
The lazy, yawning drone."—*Shakspeare.*

The perfect female, or queen, may be distinguished by her superior size, her brighter colours, and her curved sting ; the drones have no sting, the head is rounded, and the eyes larger.

As soon as plants begin to flower, bees are in motion, for the purpose of collecting honey and wax—the former of which is a sweet limpid juice found in the nectaries of flowers, the latter, a secretion from the body of the working-bees : these materials, when brought to the hive, are received by the labourers in waiting, who form cells of the wax, which serve as storehouses for the honey and nests for the young ; the honey is partly distributed for present food, and the remainder laid up for winter consumption.

The form of the cells is a great proof of admirable contrivance, being precisely of that shape which ensures both the greatest saving of space and material. There are three different kinds of cells : the first are for the larvæ of the workers, and for containing the honey ; the second, for the grubs of the drones, which require to be larger than the former ; and the third (of which there are only a small

number) are destined for the future queens, and are of a different form to the rest. The antennæ seem to be the organs by which the little architects regulate the shape of their wonderful buildings. The first cells are all made of the proper size and shape for the working-bees, but when the queen is about to lay eggs which will produce drones, the builders immediately change the dimensions of the cell to suit the intended occupant; they also, at certain intervals, construct royal cells, and about once in three days the queen deposits an egg which is destined to produce a queen. Should the queen happen to die before having laid any of these royal eggs, the bees select one of those which would have produced a working-bee; three cells are thrown into one for its reception; the grub, when hatched, is fed with peculiar food, and a queen is produced, whereas, had it remained in the original cell, and been fed with ordinary food, it would have turned out only a working-bee. When the first young queen is ready to leave her cell, the queen-mother quits the hive, with a portion of the workers, to form a new settlement, and successive swarms follow the young queens as they come to maturity, thus relieving the over-burdened hive, and forming fresh communities.

The generic distinctions of the genus *Apis* consist prin-

cipally in the length of the proboscis; the palpi are also nearly obsolete; the legs are furnished with a pollen-plate, and are destitute of spines; and the body is oblong.

The mention of honey occurs very early in the Sacred Writings, being included in the presents sent by Israel to his unknown son Joseph, when the latter was ruler in Egypt: "And their father Israel said unto them, If it must be so now, do this: take of the best fruits in the land in your vessels, and carry down the man a present, a little balm, and a little *honey*, spices, and myrrh, nuts, and almonds." "The learned authors of the 'Universal History,' while adopting the view that the presents sent by Jacob to the prime minister of Egypt must have consisted of articles which that country did not afford, contend that 'honey' cannot be really intended, as it is not likely that honey could be a rarity in Egypt. They therefore think that *dates* are meant, which are called by the same name, *debash*, and which, when fully ripe, yield a sort of honey not inferior to that of bees. Now, on this very principle, dates were still less likely than honey to have been sent, as Egypt is a famous date-growing country. It is, however, not necessary to understand honey here, as the word certainly does seem to imply different kinds of sweet things

and fruits, in different passages. Gesenius understands it here to denote 'syrup of grapes,' that is, *must*, boiled to the thickness of a syrup, which, as he observes, is still exported from Palestine, especially from the neighbourhood of Hebron, to Egypt. If we take it to be really honey, we must understand that the honey of Palestine was superior to that of Egypt, and this is the opinion to which we incline. At present the natives keep a great number of bees, which they transport up and down the Nile, to give them the advantage of different climates and productions. The hives are kept in boats, and the bees disperse themselves over the banks of the river in quest of food, returning regularly on board in the evening*."

In 1 Samuel xiv. is found another allusion to honey, which Jonathan tasted, contrary to Saul's command that the people should fast during the battle with the Philistines. "Saul had adjured the people, saying, Cursed be the man that eateth any food until evening, that I may be avenged on mine enemies. So none of the people tasted any food. And all they of the land came to a wood, and there was honey upon the ground. And when the people were come into the wood, behold, the honey dropped, but no man put

* Pictorial Bible.

his hand to his mouth, for the people feared the oath. But Jonathan heard not when his father charged the people with the oath; wherefore he put forth the end of the rod that was in his hand, and dipped it in an honeycomb, and put his hand to his mouth." Amidst the superstition here recorded, it is interesting to note the habits of the wild bees, which may be gathered from the above description: the honey is spoken of first as being on the ground, and this, though not a very common occurrence, is not incompatible with the habits of the wild bee, as, for want of a better situation, these insects will form their combs in small hollows, or in holes made by animals.

The story of Samson, recorded in Judges xiv., will here occur to the reader's memory, when a "swarm of bees, and honey" were found "in the carcase of the lion" which Samson had killed, and which gave rise to the celebrated riddle, "Out of the eater came forth meat, and out of the strong came forth sweetness," and from which resulted such disastrous consequences to the Philistines. It may appear strange that so clean a creature as the bee should select such an apparently offensive place for a habitation; but it must be remembered that some months had elapsed before Samson's second visit to the scene of his exploit,—ample

time, in that country, with the assistance of birds and beasts of prey, to reduce the carcase of the lion to a perfectly clean skeleton, in which state it would form an appropriate habitation for these little insects.

Mr. Burchell, in his 'Travels in South Africa,' says, that the Hottentots of his party obtained three pounds of good honey from a hole, left by some animal of the weazel kind; it is also spoken of as *dropping*, doubtless from honeycombs formed in the trees and shrubs. Where wild bees are abundant they build in the cavities, or even on the branches of trees; and in many parts of India and the Indian islands, the forests swarm with these insects: Mr. Roberts says, that "the forests literally flow with honey, large combs may be seen hanging from the trees," and, from the frequent allusions in the Scriptures, this was very probably the case in Palestine.

In many countries, bee-hives were placed in the trees, and on the western coast of Africa, the natives paid considerable attention to the bees, for the sake of the wax, hanging hives made of reeds on the boughs of the trees, which are eagerly appropriated by the bees. The honeycomb into which Jonathan dipped the end of his rod, was probably hanging from the bough of a tree.

There are very many allusions to honey being extensively used as food among the Israelites and other nations of the period; for instance, in Isaiah vii., "Butter and honey shall he eat," and again, "Butter and honey shall every one eat that is left in the land." "A land flowing with milk and honey" was a common saying, expressive of fertility and natural wealth. If we reverse the picture, we shall find that these comparatively harmless little creatures were held in great dread by the Israelites, and indeed by other nations, their greater numbers and wild state rendering them more formidable foes than are, in general, the peaceful and interesting inmates of our cottage gardens. Pliny mentions, that in some districts of Crete they were so troublesome as to force the inhabitants to quit the country; and some places in Scythia were, according to Ælian, quite uninhabitable from the same cause. Many other of the ancient writers speak in a similar strain, and the Bible historians form no exception. In Deuteronomy i. is the following expression, "And the Amorites which dwelt in that mountain came out against you, and chased you *as bees do*, and destroyed you in Seir, even unto Hormah:" the ancient Syriac version and some Arabic manuscripts read, "Chased you as bees that are smoked," showing how old is the custom of

applying smoke to drive bees from their hives. The royal Psalmist, speaking of his enemies, compares them to bees, "they compass me about like bees;" and Homer makes use of a similar figure—

"As in the hovel, where the peasant milks
His kine in spring-time, when his pails are fill'd,
Thick clouds of humming insects on the wing
Swarm all around him, so the Grecians swarm'd,
An unsumm'd multitude, o'er all the plain,
Bright arm'd, high crested, and athirst for war."

Modern instances are by no means wanting, to illustrate the ancient belief in the courage and ferocity of these little warriors. Mungo Park relates, that some of his party having gone in search of wild honey, they unfortunately disturbed a swarm of bees near their halting-place: "the bees came out in immense numbers, and attacked men and beasts at the same time. Luckily most of the asses were loose and galloped up the valley; but the horses and people were much stung, and obliged to scamper in all directions. In the evening, when the bees became less troublesome, and we could venture to collect our cattle, we found that many of them were very much stung, and swelled about the head. Three asses were missing; one died in the evening, and one

the next morning, and we were forced to leave one at Sibikillin, in all six, besides which, our guide lost his horse, and many of our people were much stung about the face and hands." This account shows how much these insects are to be feared, when in large numbers and their anger roused, or rather their powers of self-defence excited.

Not only are the insects themselves a legitimate cause of apprehension, in countries where their numbers render them formidable, but the deleterious effects of the honey (owing to the poisonous nature of the flowers from which it has been gathered) is frequently alluded to by ancient writers. Xenophon has recorded, that a number of Greek soldiers were violently affected by honey which they had eaten near Trebizond, during the celebrated Retreat of the Ten Thousand; and Tournefort says, "There is a kind of rhododendron about Trebizond, whose flowers the bee feeds upon, and the honey thence drives people mad;" the poet Moore, in his 'Lalla Rookh,' refers to this circumstance in the following lines:—

"Ev'n as those bees of Trebizond,
Which from the sunniest flowers, that glad
With their pure smile the gardens round,
Draw venom forth, that drives men mad."

It is probably the *Rhododendron ponticum* which produces this poisonous effect on the honey; and the *Kalmia angustifolia* of America seems to be equally destructive, as was proved by a party of adventurers, who took some hives from Pennsylvania to New Jersey, hoping that the savannahs of that country would be favourable to the increase of the bees, and the enterprise seemed very hopeful, as the bees multiplied surprisingly; but unfortunately, the honey proved to be highly poisonous, producing delirium, with various other painful symptoms, and in some instances even death ensued. This noxious honey is of course eaten with perfect impunity by the little gatherers, so that with regard to themselves, though not to their pilferer, man, the following lines of Pope are strictly correct.

“In the nice bee, what sense so subtly true,
From poisonous herbs extracts the healing dew?”

ORDER LEPIDOPTERA.

The Moth belongs to the division *Nocturna*, or night-fliers, of the Order *Lepidoptera*, and is principally distinguished from the other two, the Diurnal (Butterflies) and the

Crepuscular (Hawk-moths), by the form of the antennæ, which are *setaceous*, tapering to the extremity; by the position of the wings, which are never held vertically when the insect is at rest, but in angles, varying considerably to the plane of position. The caterpillars, or larvæ, and the chrysalides, also vary greatly in the three divisions; but for these peculiarities, and the many interesting descriptions of this numerous and beautiful order of insects, the reader is referred to the various works on entomology, as it would occupy too much space, and answer no purpose, to enter into full particulars in this little work.

The allusions in the Bible are generally to the destructive powers of the moth upon woollen fabrics, but these little creatures are alluded to in other ways, equally expressive of their habits; particularly in the following reference to their dwellings, in Job xxvii., where the house of the wicked is compared to that of a moth, "He buildeth his house as a moth, and as a booth that the keeper maketh;" meaning probably that the habitation of the wicked man is frail and perishable as that of an insect. Dr. Good says, "The house or building referred to, is assuredly that provided by the insect in its larva state, as a temporary residence during its wonderful change from a chrysalis to a winged and perfect

insect. The slightness of this habitation is well known to every one who has attended to the curious operations of the silkworm, *Phalæna mori**, or of the tribes indigenous to the plants of our own country, as *Phalæna pavonia*, the Emperor Moth, *Ph. Caja*, the Tiger Moth, *Ph. Vinula*, Poplar or Willow Moth. Of these, some construct a solitary dwelling, while others, as *Ph. fuscicauda*, or the Brown-tail Moth, are gregarious, vast numbers residing together under one common web, marshalled with the most exact regularity. The web of the cloth-moths, the principal of which is *Ph. vestianella*, is formed of the very substance of the cloth on which it reposes, devoured for this purpose, and afterwards worked into a tubular case, with open extremities, and generally approaching to the colour of the cloth by which the moth-worm is nourished."

In the 51st chapter of Isaiah is a distinct allusion to the destroying propensities of these little creatures: "For the *moth* shall eat them up like a garment, and the *worm* shall eat them like wool, but my righteousness shall be for ever, and my salvation from generation to generation." "Two species of *Tinea*, in their larva or maggot state, appear to be here mentioned under the names of *ash* and *sas*, the one as

* The *Bombyx mori* of more modern writers.

eating garments, *Tinea pellionella*, and the other as corroding wool, *Tinea sarcitella*; unless we suppose, that, after a custom of Hebrew poetry, one and the same are intended by both words. The ravages which these latent marauders commit among the most costly stuffs and the choicest furs, can scarcely be imagined by those who have had no opportunities of observing the effects. Moths so abound in the East as to occasion far greater damage than we are accustomed to witness; and as the orientals are in the habit of forming extensive wardrobes, often containing articles of great price and richness, the loss thus produced is the more sensibly felt, and accounts for the frequent allusions in Scripture to the devastations of the moth*."

Though silk is alluded to in Ezekiel xvi., it seems very uncertain whether this article of luxury were really known to the Israelites at the time the prophet wrote, or whether it was only known to himself from his captivity in Babylon; the latter conjecture is probable, as in the ensuing chapter he speaks of Babylonia as "a land of traffic," and Babylon, "a city of merchants."

These "merchants" would, in all probability, obtain silk as an article of luxury from India, the inhabitants of

* Pictorial Bible.

which were supplied from China, the original country of the silkworm moth: for it is a well-known fact, that "Assyria, understood of Babylonia in the large sense, was the source from which the Romans continued to derive their silk even in the time of Pliny; and this is always mentioned previously, as the country from which silk was brought, although the nations of Eastern Europe were not ultimately unaware that it came from a remote country which they called Serica, by which China appears to have been vaguely understood. From this it will appear, that the question as to the existence of silk in Babylon is merely one of date, and although it may not be possible to find any positive statement to indicate its presence there at the time when Ezekiel wrote, there is every probability in favour of this conclusion, as, when we first find it in these intermediate countries, there is not the least intimation that it had there only newly become known; and we can come near enough to show, that if it had not been newly introduced, it must have been known there in the time of Ezekiel. It is a remarkable fact, that the first persons who brought wrought silk into Europe were the Greeks of Alexander's army, which conquered the Persian empire, in which Babylon was then included. In other words, about two hundred

and fifty years after Ezekiel, silk is known to have been used in the dress of the Persians. As the Medes and the Babylonians (or at least the latter) were luxurious and wealthy, and fond of rich dresses, it may well be supposed that they absorbed all the limited supply which reached them; and as the nations more west were less rich and of plainer manners, the merchants had no motive to carry the commodity to a more western market. This will show that silk may long have been in use in Babylonia before it was known in Europe and on the western shores of Asia*."

As the dress described in the foregoing chapter consisted of the richest and most beautiful materials, of "fine linen," "silk," bracelets, chains, jewels, ear-rings, and a "beautiful crown," it is very natural that the prophet should mention silk, which he had probably seen in Babylon as an article of great costliness and luxury; and as the description of this costume is entirely figurative, by which Ezekiel describes the precious things with which God had invested the people of Israel, it is not at all necessary to suppose that silk was at that time known to the Israelites in general; and the probabilities are against this supposition, for even some centuries later, in the time of the Roman

* Pictorial Bible.

Emperors, it was so expensive, that under Tiberias it was forbidden to be used by men: one of the most extravagant charges brought against Heliogabalus is, that he was the first man who wore a robe made entirely of silk; and the Emperor Aurelian refused a silk dress to his consort on account of the extravagant price.

Of course the moth *Bombyx mori*, and its larva, from which all our silk is derived, was entirely unknown to the Israelites. It is a whitish moth, with a broad pale brown band across the upper wings. The larva is of a yellowish-grey colour, and when full-grown about three inches long. It feeds principally on the mulberry.

ORDER DIPTERA.

CULEX.—The Gnat.

The family *Culicidæ*, to which this insect belongs, is distinguished by the length of the proboscis and by the beautifully tufted antennæ; the larvæ are inhabitants of the water, in which element they move with great rapidity, coming to the surface in order to breathe, which they do with the head downwards, as the respiratory apparatus is situated at

the end of the body; when transformed into pupæ, they exhibit the rudiments of legs and wings; the external organs for breathing consist of two spiral horns, and they still swim with great agility by means of two swimmerets, or little oars. The perfect insects abound in damp situations; their flight is accompanied by a humming noise, caused by the vibration of the wings.

The well-known English species is called *Culex pipiens*, but though we suffer from its attacks, it is, from the comparatively small numbers, a far less formidable enemy than the corresponding species in many other countries; for instance, the *C. musquito* of hot climates, and the Lapland species, which fills the air during the short summer of that latitude with its myriad tormentors, so that the natives scarcely venture out of their cabins, without first smearing their faces with a mixture of tar and cream.

The tormenting powers of the mosquito or gnat are mentioned even in very ancient records; and it is said that a king of Persia was obliged to raise the siege of Nisibus in consequence of a swarm of gnats, which attacked the elephants and horses with so much fury as to cause the rout of his army. By some writers it has been conjectured that the Egyptian plague of "flies" in reality consisted of

mosquitos; and the arguments in favour of this opinion are very plausible. The swelling and subsiding of the river Nile would probably cause a vast increase of these insects, as the damp would be particularly favourable to them; and the words "swarms" is also very applicable, as any one will agree who has seen a "swarm of gnats at eventide;" but the opinion of Mr. Kirby and other eminent writers is in favour of the *Blatta Egyptiaca*, or Egyptian cockroach. The reader will find the arguments in favour of this idea under the article BEETLE.

In Matthew xxiii. the gnat is spoken of in the following manner, when Jesus is admonishing the people not to follow the evil example of the Scribes and Pharisees:—"Woe unto you, Scribes and Pharisees, hypocrites! for ye pay tithe of mint and anise and cummin, and have omitted the weightier matters of the law, judgment, mercy, and faith: these ought ye to have done, and not to leave the others undone; ye blind guides, which *strain at a gnat* and swallow a camel." At first this expression may seem only to imply difference and contrast in size, in order to show, in the figurative language of the East, that the false teachers whom our Saviour had denounced, would not hesitate to commit great sins (typified by swallowing a camel), though

they were very punctilious with regard to small deviations from the traditions which had been engrafted on the laws of Moses, and which were in reality as innocuous to their souls, as the swallowing of a gnat would have proved to their bodies.

But there is more in this expression than at first sight would appear; and it will be rendered more clear, by adopting the translation in Archbishop Parker's Bible, "*Strain out a gnat and swallow a camel.*" "In the East, where insects of all kinds and sizes abound, it is difficult to keep clear of insects, liquors which are left for the least time uncovered; for which reason, as well as because there are some kinds which breed in wine, it was and is usual to strain the wine before drinking, to prevent insects from passing into the drinking-vessel. Besides the common motive of cleanliness for this practice, the Jews considered that they had another and more imperative one—that of religious purity. For, as the law forbade them to eat "*flying creeping things,*" they thought themselves bound to be particularly careful in this matter. On this subject, as usual, they refined very much; and the Talmud contains many curious explanations and directions concerning it: thus,—"*One that eats a flea or a gnat is an apostate, and is no more to be counted one of the congregation.*" It

seems, however, that a person doing this might, under certain circumstances, escape further consequences by submitting to be scourged: "Whosoever eateth a whole fly or a whole gnat, whether alive or dead, is to be beaten on account of the flying creeping thing."

The great solicitude which was hence exhibited to exclude the smallest insects from drinks, gave occasion to the present proverb, applied to much care about small matters and none about greater. The camel need occasion no more difficulty in this proverb than in that which refers to a camel's passage through the eye of a needle; for the camel, being about the largest animal commonly known to the Hebrews, was naturally selected to give the hyperbolical point, usual with the orientals, to their contrast of the great with the little. Hence, the elephant is also mentioned in the same manner and for the same reason as the camel, in many proverbs of the East; as in that analogous Arabian one, cited by Pococke, "He swallows an elephant, and is strangled by a flea*."

The word rendered "lice" in Exodus viii. is translated in the Septuagint by *kinnim*, which means the mosquito, and, as the translators lived in Egypt, their opinion is en-

* Pictorial Bible.

titled to great respect. Origen and Jerome also concur in this view, which has been adopted by many modern writers, as Gesenius and Boothroyd. Scarcely any insect could be found which would so truly come under the denomination of a "plague," or form so great a scourge, as these little creatures, whose insatiable thirst for blood, and the painful nature of their attacks, rendering sleep quite impossible, are only fully known in hotter climates than ours. The only method of procuring rest is by using mosquito-curtains; and it is well known that the ancient Egyptians adopted this plan. Herodotus mentions that the inhabitants of Lower Egypt used their fishing-nets for this purpose, as gnats and flies will not pass through even coarse netting. Travellers concur in declaring, that there is no country where the mosquito is so numerous, or their bite so painful, as in Egypt; and their god, Baalzebub, the "god of flies," was doubtless the deity propitiated when they were suffering under this infliction. The Egyptian mosquito is small, ash-coloured, with white spots on the legs.

Many commentators, however, prefer our authorized translation, "Aaron stretched out his hand with his rod, and smote the dust of the earth, and it became *lice* in man and in beast." These disgusting creatures certainly

abound in Egypt in an equal degree with mosquitos, so that is almost impossible to be wholly free from them. They belong to that division of the insect world, the members of which undergo no transformation from larva to pupa and thence to the perfect insect. There are two families, *Pediculidæ*, living on man and quadrupeds, and *Nirmidæ*, living on birds: the species vary according to the animal on which they live.

THE HORNET.—There are several notices of the *hornet* in the Scriptures, according to our translation. In Exodus xxiii. is the following: "I will send hornets before thee, which shall drive out the Hivite, the Canaanite, and the Hittite from before thee." And again, in Deuteronomy vii., "Moreover the Lord thy God will send the *hornet* among them, until they that are left, and hide themselves from thee, be destroyed;" and in Joshua xxiv. is recorded the fulfilment of these promises—"I sent the hornet before you, which drove them out before you, even the two kings of the Amorites; but not with thy sword, nor with thy bow." Many interpreters consider these texts in a figurative sense, the hornet denoting either fear, which caused the Canaanites to flee before Israel, or plagues and diseases, causing the same result; and the Scripture language, as

that of the East continues to this day, is so highly metaphorical, that there is no improbability in the suggestion.

If, however, the more literal reading be preferred, there is still a question as to the insect intended. The original word is *tzirah*, expressive, probably, of a loud buzzing noise: this may refer to the hornet, but the *zimb*, or dog-fly of Abyssinia, offers so many analogies to the terrible insect which is mentioned in Scripture under the particular name of *tzirah*, and the general one of *zebub*, that, although we may not be able to say positively that they are the same, the statement concerning the *zimb* may at least be taken to furnish the best analogous illustration which it is now possible to obtain. One fact, which gives the greater weight and probability to the identification, is the certainty that the *zimb* was known to the Israelites, for it is difficult to suppose that Isaiah (ch. vii.) could have had any other insect in view, when he says, "The Lord shall hiss for the fly that is in the uttermost part of the rivers of Egypt." Bruce does not fail to cite this passage. The original word, there rendered "fly," is *zebub*, and, as he observes, "the Chaldee version is content with calling this animal simply *zebub*, which signifies the fly in general, as we express it in English. The Arabs call it *zimb* in their translation, which has the

same general signification. The Ethiopic translation calls it *tsaltsalya*, which is the true name of this particular fly in Geez, and was the same in Hebrew."

"Bruce thus describes this formidable insect. It is in size very little larger than a bee, of a thicker proportion, and has wings which are broader than those of a bee, placed separate like those of a fly; they are of pure gauze, without colour or spot upon them. The head is large; the upper jaw or lip is sharp, and has at the end of it a strong pointed hair, of about a quarter of an inch long, the lower jaw has two of these pointed hairs; and this pencil of hairs, when joined together, makes a resistance to the finger nearly equal to that of a hog's bristle. Its legs are serrated in the inside, and the whole covered with brown hair or down. It has no sting." "As soon as this plague appears and their buzzing is heard, all the cattle forsake their food, and run wildly about the plain till they die, worn out with fatigue, fright, and hunger. No remedy remains but to leave the black earth (where they breed) and hasten down to the sands of Atbara, and there they remain while the rains last, this cruel enemy never daring to pursue them further." Without these precautions the whole stock of cattle would be lost. The camel is equally liable to the attacks of this

pest; amongst wild animals even the thick hide of the elephant and rhinoceros is no protection against their virulence, and as these cannot remove to the sandy regions, owing to the nature of their food, they are obliged to roll themselves in mud, which, when dry, forms a kind of armour against their winged adversaries. "If we compare this account with the passage in Isaiah above referred to, in which the Lord threatens to call for 'the fly of Ethiopia' as an agent for the punishment of iniquity, and if this be really the insect to which the text refers, the probability seems to be that the *zimb* was not then, any more than now, a native of Palestine; but that swarms of them were drawn from Ethiopia to execute the divine will. The Canaanites would be the more terrified by the calamity, from being unacquainted with its nature; they could not, therefore, regulate their flight by that knowledge of the insect's habits which the Abyssinians possess*."

Virgil thus truly describes this insect under the name *Asilus*, probably only a different pronunciation of *ha-tzirah*, by which it is called in the writings of Moses and Joshua.

"Of winged insects mighty swarms are seen;
This flying plague (to mark its quality)

* Pictorial Bible.

Æstros the Grecians call—Asilus we :

A fierce, loud buzzing breeze. Their stings draw blood,
And drive the cattle gadding through the wood."

Though these insects have no sting, they cause great suffering, by piercing the skin with their pointed proboscis, and depositing their eggs in the punctures, in the same manner as the *Æstrus*.

CLASS ARACHNIDA.

The Spider is too remarkable a creature in its structure and habits, to be passed over by the sacred writers ; accordingly we find it frequently alluded to ; but before referring to these passages, we will gather from other sources a short account of these well-known, but too often despised creatures.

Linnaeus ranked spiders with insects ; but though similar in many respects, they are distinguished from them by the number of their limbs, their internal structure, and their habits. Spiders are destitute of antennæ, but are provided with a pair of pincers terminating in sharp points, perforated by small holes, through which a poison is emitted, fatal to most of the smaller insects. The eyes are unlike those of in-

sects, being simple, though six or eight in number; spiders have also eight legs, two more than in the class INSECTA. The most remarkable feature in the structure of the spider, is the power of producing slender, silk-like threads, called gossamer; the gummy matter of which these are formed is secreted in little bags, connected with a circular orifice near the end of the body; within this orifice are five *spinnerets*, through which the silken thread is drawn; these spinnerets are pierced with thousands of tubes, too minute for the naked eye to discern, and each emitting a thread of wonderful fineness, which uniting, like the strands of a rope, form the thread by which the little creature suspends itself, and also forms its web. "Thus the spinning apparatus of the disdained spider, when viewed by the eye of science, becomes one of the most wonderful pieces of animated mechanism, and is of itself sufficient to establish, that nothing short of Divinity could have framed it*."

The female spider lays a number of round, whitish eggs, which are sometimes merely placed in a crevice, without any protection; others are enclosed in a cover of gossamer; and a third kind in a soft envelope. "The attention which spiders pay to these cocoons almost equals

* Constable's Miscellany.

that of the ant for its larvæ. We once deprived a garden spider of its eggs, and covered them slightly with earth; the animal scampered away for a few feet, and then gathered up its legs, and lay down as if dead. In a short time, when all was quiet, it returned to the spot, and searched round every clod and pellet, till it ultimately discovered the object of its search, which it gently uncovered, cleaned, enveloped with a few rounds of fresh gossamer, and then bore rapidly away to a secret crevice. The young of some species are fed for a short while by the parent; but the majority, we believe, shift for themselves on leaving the envelope, as they soon arrive at maturity*." Spiders are strictly carnivorous in their habits.

We will now visit some of the habitations formed by these industrious and unique artificers; and first observe the Garden Spider (*Epeira diadema*), one of the most interesting of the family, both from its own beauty and that of its web. "It is the circular net of this species which we so often see glittering among the branches of shrubs and trees, formed with as much art and regularity as the figures adorning the finest lace-work. The manner in which this net is suspended and stayed on every side, displays even greater in-

* Constable's Miscellany.

genuity than is to be found in the web of the house spider. When desirous of forming a net, the *Epeira* fixes one end of her thread to the place where she is seated, and then elevating her spinnerets, throws from them a continued jet of thread, which floats onward until it reaches some adjoining branch, to which, by its glutinous nature, it adheres. By occasionally feeling the tightness of the thread, the spider knows when it has fastened, and she walks backwards and forwards over it, each time strengthening it by an additional strand. In this way she lays several suspension chains, each properly stayed and tightened, and then proceeds to weave the net-work* ;” forming those circular threads which give to the net so geometrical an appearance.

The net of the Labyrinthic Spider (*Angela labyrinthica*) is also very worthy of examination ; it is the largest construction of any European species, and may be seen in profusion towards autumn, forming a broad sheet, spread on hedges and furze. Mr. Rennie says that “the middle of this sheet, which is of a close texture, is swung, like a sailor’s hammock, by silken ropes extended all round to the higher branches, but the whole curves upwards and backwards, sloping down to a long funnel-shaped gallery, which

* Constable’s Miscellany.

is nearly horizontal at the entrance, but soon winds obliquely, till it becomes quite perpendicular. This curved gallery is about a quarter of an inch in diameter, is much more closely woven than the sheet of the web, and sometimes descends into a hole in the ground, though oftener into a group of crowded twigs, or a tuft of grass. Here the spider dwells secure, frequently resting with her legs extended from the entrance of the gallery, ready to spring out upon whatever insect may fall into her sheet net."

The Gossamer Spiders (*Aranea obtectrix*) have the power of shooting out lines of gossamer, so as to render themselves quite buoyant, and thus they float about, as though they had wings. These abound both in Europe and America.

The Water Spider (*Argyroneta aquatica*) makes its habitation in the water, by spinning loose threads to the leaves of water-plants, over which it spreads a transparent varnish, like liquid glass, and quite elastic; within this globe a bubble of air is drawn by degrees, the little creature coming to the surface several times, and carrying with it, in descending, a small portion of air, which looks like shining quicksilver; when sufficiently inflated, the ingenious builder is possessed of a perfectly dry habitation in the midst of water. These, and many other examples, evince the marvellous

instinct with which these apparently insignificant creatures are endowed, amply justifying the notice of the sacred writers.

In the book of Job an allusion is made to the fragility of the spider's dwelling: "So are the paths of all that forget God; and the hypocrite's hope shall perish: whose hope shall be cut off, and whose trust shall be a spider's *web*. He shall lean upon his house, but it shall not stand: he shall hold it fast, but it shall not endure." The literal translation of the word rendered *web* is *house*, and this would give much greater force to the expression, "He shall lean upon his *house*, but it shall not stand." The fragile nature of the spider's web is too well known to require any illustration beyond those which have already been given, and the simile shows that the nature of these wonderful constructions had not escaped the observation of the sacred historians, nor, indeed, the general habits of the little architect, for in Proverbs xxx. it is ranked as one of the "four things which are little upon the earth, but they are exceeding wise."

"The spider taketh hold with her hands, and is in kings' palaces." There is here an allusion to two of the characteristics of the spider, the use of its "*hands*" in forming and

clinging to its web, and the construction of that web in the habitations of man. Solomon, of course, referred to the house spider, though the species, in all probability, differed from the too-familiar denizen of our dwellings. The claws on the foot of the spider are of great use in her delicate work, being in many cases furnished with comb-like teeth, which enable her to keep the threads separate when necessary. The foot has also a third claw, on which the spider winds up the superfluous silk. The under surface of the foot is in general furnished with a thick kind of brush, formed of slender bristles, fringed with delicate hairs. This is an exceedingly beautiful and interesting subject for microscopical investigation.

Hitherto the spider's web has been used as a type of fragility; in Isaiah lix. it is spoken of as a snare, and in the highly metaphorical language of the East the wicked are said to "weave the spider's web;" and the prophet continues, "Their webs shall not become garments, neither shall they cover themselves with their works; their works are works of iniquity, and the act of violence is in their hands." Whoever has watched a spider lying concealed in her cell, and darting out the moment an unwary insect is entangled in the meshes of her net, grappling it in her

claws, and sending her poisoned fangs into its body, will see the force and truth of the prophet's simile, and will be interested in noticing the same facts in nature which were presented to the eye of the wise men of old, who did not disdain to mark and record the habits even of the poor spider, and still more diminutive ant.

The more formidable Scorpion is of the same class as the spider, but of the order *Pedipalpa* of Latreille, and family *Scorpionidæ*. The body is terminated by an elongated tail, armed with an acute and curved sting, capable of inflicting most painful, and often deadly, wounds. The legs and eyes are eight in number, as are the breathing pores, four on each side; the palpi are greatly developed, forming instruments of prehension, and terminated by a large claw; the body is furnished with comb-like appendages on the under side, the use of which has not been ascertained. The young scorpions are born alive, and vary in a brood from twenty to double that number; the mother carries them about on her back for several days, seldom quitting her retreat; in the course of a month they are able to take care of themselves. They shed their skins annually.

The scorpion is chiefly an inhabitant of tropical countries, living in sandy districts, and concealing itself under stones,

etc. Its food consists of ground-beetles, cockroaches, and other insects of that nature, which are first wounded by the sting, and then conveyed to the mouth; the eggs of spiders are also a favourite food. Scorpions run very quickly, using their long tail both as an offensive and defensive weapon. The general size of the European species is not more than two or three inches, and the sting scarcely more severe than that of the hornet, being only fatal where the body is predisposed to disease; but in tropical climates, where these creatures are found twelve inches long (as those in Batavia), or, according to Bosman, as large as a lobster, on the Gold Coast, they are most formidable enemies, and their sting invariably fatal.

The dread with which the scorpion is still regarded in the East is a sufficient commentary on the well-known passage in the 2nd book of Chronicles, ch. x., where Rehoboam, the son of Solomon, made the imprudent and cruel answer to his people, which caused the revolt of Israel from the house of David; and though of course used in a figurative sense, the scorpion (probably the *Scorpio afen*) must have been well known and much dreaded, for the threat to have been made in this form by the king: "My father made your yoke heavy, but I will add thereto; my father chastised

you with whips, but I will chastise you with *scorpions*." And again, in Revelation ix.: "And they had tails like unto *scorpions*, and there were stings in their tails; and their power was to hurt men five months."

That these creatures were familiar to the ancients, we have proofs from profane as well as sacred writers. The zodiacal constellation of the Scorpion was so named, it is said, from the sting being inflicted by that animal as it retreats; this bearing a fancied resemblance to autumn, which was supposed to leave a train of diseases as it disappeared. In the Egyptian mythology the scorpion is the symbol of evil.

CLASS ANNELIDA.

ORDER SUCTORIA.

HIRUDO.—The Leech.

The creatures forming this genus are mostly aquatic, some being inhabitants of fresh water, others of the sea, and a small number preferring moist situations near stagnant water. Their eggs are enveloped in a kind of cocoon, of a texture much resembling sponge. The *H. medicinalis* is the most familiar example, and needs no lengthened description, though the mouth may claim a short notice, as being remarkably adapted to the food on which it subsists, the fluids of frogs, fish, etc. It is placed in the centre of the cavity formed by the anterior sucker, and is composed of three little cartilaginous bodies, or jaws, so disposed that the three edges form three radii of a circle: each of these is furnished with two rows of minute teeth, so as to resemble

a saw, and these, by the action of a muscle, cut into the skin. The leech has eight or ten simple eyes, which may be seen with a magnifying-glass, looking like a semicircular row of black points above the mouth. There are two species used in the medical art, which are chiefly brought from France, Spain, Sweden, and Hungary.

The Horse Leech (*Hirudo sanguisuga*) is of a more depressed form than the common species; the head and tail are slender; the body thick, of a dusky colour above, and yellowish-green beneath. It lives in pools and stagnant water. This is supposed to be the species referred to in Job xxx., in that singular expression, "The horse-leech hath two daughters, crying, Give, give;" probably intending to describe its insatiable thirst for blood, which would excite no feeling but disgust and aversion in the East, as the use to which we apply the leech being unknown, the natives are only acquainted with it as a destroyer of their valuable horses and other animals, by fastening under their tongues when they drink. Some writers have endeavoured to explain this text allegorically, and it is not improbable that the original meaning is somewhat different from our version, though, as a type of rapacity, the horse-leech would not be at all unlikely to occur to the mind of an oriental.

CLASS MOLLUSCA.



ORDER GASTEROPODA.

HELIX.—The Snail.

Helix is the general name of a most extensively diffused class of mollusks: "it is equally adapted to the hottest and the coldest climates, the most cultivated or the most barren situations. The common garden snail of this country, and the edible snail of France and Italy, are well-known examples of this family; but in tropical climates, more striking ones are to be found." Those who despise and see no beauty in the snails of this country, should examine the collection in the British Museum, or the perfect and beautiful specimens brought from the Philippine Islands by Mr. Cuming, which look like jewels of all hues, so varied and brilliant are they in colour.

Snails lay eggs, which they carefully bury in the ground;

they are round, semitransparent, and covered with small shells, which increase in size according to the growth of the animal: the addition is always at the mouth, the snail sending forth from the mantle (or outer covering of the body) a liquid, which, on exposure to the air, becomes hardened into shell. The food of the snail consists of the leaves of plants and trees; it is very voracious, though extremely particular in its choice. In winter it buries itself in the ground or retires to a hole, where, in a state of torpidity, it braves the utmost severity of the season.

The common Garden Snail (*Helix aspersa*) is found in all quarters of the globe; in Europe, Asia, and Africa, in Guiana and Brazil, and in the desert of Zahara. The edible snail (*Helix pomatia*) is a native of many European countries, and on the shores of the Mediterranean is regarded as a valuable article of food.

As there are a variety of species in every country, it is of course impossible to fix upon any one in particular, as the snail mentioned in the Psalms; and indeed this is not at all necessary, as the allusion is made to a peculiarity which is common to the whole family. The original word in Psalm lviii. is *shabbelul*, which is derived from a word signifying a trail, or path, and is, therefore, remarkably

descriptive of the snail, whose glutinous secretion so clearly marks the line of its progress. The expression used is "As a *snail* which melteth, let every one of them pass away." "We should be disposed to render the first part of this verse by 'Like the snail which wasteth away as it goes*.'" "

It has been already stated that the word translated *snail* in Leviticus xi. was probably the *Lacerta stellio*, a kind of lizard, the original, *chomet*, signifying to bow down; and this *Lacerta* is noted for bowing its head continually, so that the Mahommedans destroy it, saying that it mimics their attitude of prayer.

ORDER LAMELLIBRANCHIATA.

AVICULA (Meleagrina) MARGARITIFERA.—The Pear Oyster.

The valuable and beautiful substance called mother-of-pearl, and pearls themselves, are generally found in the above-named shell, though there are many others which produce them in considerable numbers; such as the common oyster (*Ostrea edulis*), the mussel (*Mytilus edulis*), the

* Pictorial Bible.

swan mussel (*Anadonta cygnea*), the pearl mussel (*Alasmodon margaritiferus*), and the *Pinna* of the Mediterranean and Red Seas, whose pearls are of a fine pink colour, and are supposed by Bruce to be the *rubies* of the Bible. "When Solomon," he says, "terms them the most precious of all productions, he must be understood to mean chiefly this species of pearl, as having been the most valued in the land of Judea." The shell, however, which produces the greatest proportion of pearls is the *Avicula* or *Meleagrina margaritifera*, which is a native of many parts of the world, more particularly the west coast of Ceylon, the Coromandel coast, the Bahrein Islands in the Gulf of Persia, and the West Indies.

In Reeve's 'Conchologia Systematica,' pearls are thus scientifically described:—"Pearls are small, nacreous balls, that become formed and hardened within the body of the animal; they are found deposited in the most fleshy parts, and are said to be occasioned by the overcharge of those glands whose function it is to secrete the nacreous fluid destined for the internal lining of the shell. When the animal is thus diseased, this beautiful iridescent fluid is very irregularly discharged, being also deposited upon the inner surface of the shell in little excrescences; these are often

detached, and form articles of commerce, as pearls of inferior value; the former being considered more precious, both on account of their rotundity of form, and the clearness and beauty of their complexion."

Very amusing notions were held by the ancients on the origin of these beautiful productions. Pliny tells us that the oyster which produces pearls, does so from feeding upon heavenly dew: our own early writers have recorded the same opinions. In the East, it is commonly believed that these gems are

" Rain from the sky,
Which turns into pearls as it falls in the sea;"

or, as it is still more poetically expressed by the natives of India, they are congealed dew-drops, which Buddha, in certain months, showers upon the earth, and which are caught by the oysters whilst floating on the waters to breathe.

Pearls were held in great esteem in ancient Rome. The Roman ladies used them in all parts of their dress, and frequently wore several in each ear: the moralist Seneca reproved some one by saying that "his wife carried all the wealth of his house in her ears." Julius Cæsar presented one to Servilia, the mother of Brutus, valued at £48,417 of our money; and the celebrated pearl which Cleopatra is

said to have dissolved and drank, was worth more than £80,000. In Persia, pearls were formerly valued at their weight in gold, and even lately immense sums have been given for those of a large size.

“There is no spectacle the island affords,” says Mr. Perceval, in his account of Ceylon, “more striking to a European than the Bay of Condatchy during the season of the pearl-fishery. This desert and barren spot is, at that time, converted into a scene which exceeds in novelty almost anything I ever witnessed ; several thousands of people, of different colours, countries, castes, and occupations, continually passing and repassing, in a busy crowd : the vast numbers of small tents and huts, erected on the shore, with the bazaar or market-place before each ; the multitude of boats returning in the afternoon from the pearl-banks, some of them laden with riches ; the anxious, expecting countenances of the boat-owners while the boats are approaching the shore, and the eagerness and avidity with which they run to them when arrived, in hopes of a rich cargo ; the vast number of jewellers, brokers, merchants of all colours and all descriptions, both natives and foreigners, who are occupied in some way or other with the pearls, some separating and assorting them, others weighing and

ascertaining their number and value; while others are hawking them about, or drilling and boring them for future use: all these circumstances tend to impress the mind with the value and importance of that object which can of itself create this scene."

The principal oyster-bank at Ceylon is about twenty miles from the shore, and during the season (February and March) the boats, each containing ten divers and as many rowers, sail and return together. The divers go down five at a time alternately, facilitating their descent by means of a large stone, fastened to a rope, which is held by the toes of the right foot; those of the left holding a bag made of network; the hands are also employed—the right, in grasping another rope, the left, in holding the nostrils, to prevent the ingress of water. When the ground is well clothed with oysters, a diver will sometimes bring up one hundred and fifty at once; and when he has collected as many as he can, whilst able to remain, he gives the signal by pulling the rope, as his comrades soon draw him up with his cargo. The exertions made by these poor men are very severe; as they frequently make forty or fifty plunges during the day, remaining each time from one minute to two, or even more in some instances. They seldom live to

a great age, and often undergo intense suffering, besides the dread of the ground shark, which proves a constant source of apprehension, as many divers are killed, or at least lose their limbs, by this terrible enemy almost every season. It is not uncommon for these men to die from apoplexy ; it is said that one expired immediately on reaching land, having brought with him one shell containing a pearl of great size and exquisite lustre. The following beautiful lines form part of a poem written on this incident, and entitled 'The Pearl-wearer : '—

“ Within the midnight of her hair,
Half-hidden in its deepest deeps,
A single, peerless, priceless pearl,
All filmy-eyed for ever sleeps.
Without the diamond's sparkling eyes,
The ruby's blushes—there it lies,
Modest as the tender dawn,
When her purple veil's withdrawn.—
The flower of gems, a lily cold and pale !
Yet what doth all avail ?—
All its beauty, all its grace,
All the honours of its place ?
He who pluck'd it from its bed,
In the far blue Indian ocean,
Lieth without life or motion,
In his earthly dwelling—dead !

And his children one by one,
When they look upon the sun,
Curse the toil by which he drew
The treasure from its bed of blue."

A double-pointed stick is sometimes carried by the divers, to thrust into the mouth of the shark in such a position, that in attempting to seize their victim, the jaws close on the two points. This and other precautions are, however, often unavailing, and the poor diver loses his life, or is maimed in a terrible manner.

The pearl is not mentioned very early in the Sacred Narrative, at least in our version; but in Genesis ii. occurs the word "bdellium," which is a gum, once famous for its medicinal properties; but the word translated *bdellium* is in the Arabic version rendered *pearl*, and there seems much probability that this was really intended; it is mentioned with gold and gems, and if, as is supposed, the land of Havilah lay near the Persian Gulf, it would be natural to mention this, one of its most valuable productions. Job names the pearl, in enumerating the riches of the world, all of which could not be put in competition with the treasures of wisdom: "It cannot be gotten for gold, neither shall silver be weighed for the price thereof. It cannot be valued with

the gold of Ophir, with the precious onyx, or the sapphire. The gold and the crystal cannot equal it, and the exchange of it shall not be for jewels of fine gold. No mention shall be made of coral or of *pearls*; for the price of wisdom is above rubies. The topaz of Ethiopia shall not equal it, neither shall it be valued with pure gold."

The reader will remember several well-known allusions to pearls in the New Testament, all evincing a knowledge of their value and beauty: "Give not that which is holy unto the dogs, neither cast ye your *pearls* before swine" (Matthew viii.); and again, "The kingdom of heaven is like unto a merchant man, seeking goodly *pearls*; who, when he had found one *pearl* of great price, went and sold all that he had, and bought it" (Matthew xiii.).

There are some things mentioned in Scripture, which, though not in themselves animals, are either portions of, or produced by, animals: of these are *ivory*, *coral*, and a few of the dyes used by the ancients, such as purple and scarlet,

the former produced from certain shell-fish, the latter from the *Hermes*, or cochineal insects; also skins and parchment.

Ivory, or as the marginal reading renders it, "elephants' teeth," is enumerated in the list of articles of luxury brought by Solomon's navy. "For the king had at sea a navy of Tharshish with the navy of Hiram: once in three years came the navy of Tharshish, bringing gold and silver, ivory and apes and peacocks." A similar account is given in 2 Chronicles ix. 21.

The question of the locality whence these riches were brought, has been already discussed in speaking of the Ape, and therefore need not be renewed. That the ivory was brought in considerable quantities, is apparent, from the uses to which it was applied; in the last-named chapter is a description of an ivory throne erected by Solomon: "Moreover the king made a great throne of ivory, and overlaid it with pure gold. And there were six steps to the throne, with a footstool of gold, which were fastened to the throne, and stays on each side of the sitting place, and two lions standing by the stays; and twelve lions stood there on the one side and on the other, upon the six steps. There was not the like made in any kingdom." In Psalm xlv. ivory palaces are mentioned: "All thy garments smell of myrrh,

aloes, and cassia, out of the *ivory* palaces, whereby they have made me glad." Of course the latter expression can only be intended to show that ivory was abundantly used in the interior decoration of the palaces alluded to, the practice of inlaying being in very extensive use among the ancients, both classical and oriental. Lucan alludes to this art, when describing the banqueting hall of Cleopatra.

"Rich as some fane by lavish zealots rear'd,
For the proud banquet stood the hall prepared;
Thick golden plates the latent beams infold,
And the high roof was fretted o'er with gold;
Of solid marble all the walls were made,
And onyx ev'n the meaner floors inlaid,
While porphyry and agate, round the court,
In massy columns rose, a proud support.
Of solid ebony each post was wrought,
From swarthy Meroë profusely brought;
With *ivory* was the entrance crusted o'er,
And polish'd tortoise hid each shining door;
While on the cloudy spots enchased was seen,
The lively emerald's never-fading green."

And Virgil says,

"The surrounding ebon's darker hue,
Improves the polish'd ivory to the view."

In Layard's 'Nineveh' are the following notices of

ivory:—"In the rubbish near the bottom of the chamber, I found several objects in ivory, upon which were traces of gilding; amongst them were the figures of a king, carrying in one hand the Egyptian *cruæ ansata*, or emblem of life, part of a crouching sphinx, and an elegant ornamental border of flowers." And again: "In another chamber (of the north-western palace at Nimroud) were discovered the beautiful ivory ornaments now in the British Museum. The most interesting of these ivories are two small tablets, one nearly entire, the other much injured, on which are carved two sitting figures, holding in one hand the Egyptian sceptre, or symbol of power."

Inlaying is still much used by the orientals in ornamenting their splendid apartments, though different kinds of wood are generally employed for this purpose.

Ivory made into tablets was formerly much used for writing upon; a paint-like ink was used, which might easily be effaced. The prophet Amos mentions the use of ivory in ornamenting the beds, or rather couches, on which the Hebrews, like other eastern nations, reclined when taking their meals; he is speaking of the luxurious inhabitants of Zion, denouncing "them that are at ease," and continues, "Ye that put far away the evil day, and cause the seat of

violence to come near ; that lie on beds of ivory, and stretch themselves upon their couches, and eat the lambs out of the flock, and the calves out of the midst of the stall ; that chant to the sound of the viol, and invent to themselves instruments of music like David ; that drink wine in bowls, and anoint themselves with the chief ointments." The pictures of luxury here given, the ornamented couch, the choice food, the wine, the rich oils for anointing, the music and the song, may be all met with at the present day in western Asia, with one exception, that of wine, in countries professing the faith of Mahommed.

The tusk of the elephant, which is the ivory of commerce, is nearly straight, or curved upwards ; the largest are from five to eight feet long, and weigh from twenty to eighty pounds each ; in the female they are very much smaller : the first tusks of the young elephant drop off when the animal is about fourteen months old, and soon after, the permanent tusks appear ; they continue growing by a fresh, layer of ivory on the inner surface, like the horn of an ox, until they have attained their full size. The tusks of the African elephant are both larger and of firmer texture than those of the Asiatic species, so that African ivory is of greater value, as being capable of a higher polish, and is more abundant in quantity.

The beautiful and well-known substance called Coral, mentioned only in Job xxviii., "No mention shall be made of coral or of pearls; for the price of wisdom is above rubies," is of a very singular and interesting nature. "The animals of the genus *Corallina* are arborescent or tree-like in form; the stem fixed, with calcareous, subdivided branches, mostly jointed. Neither pores nor polypes are distinguishable on the surface of these beings, and they were formerly supposed to be vegetable; but they give the most evident tokens of large portions of ammonia, the common test of animal substance, and have been often traced to have spontaneous motion. Every tube, vesicle, or articulation is probably the enclosure of a distinct animal, so that the entire mass of tree is a family; in this respect resembling a vegetable tree, in which every bud may also be regarded as an individual living plant*."

To the growth of coral is owing a very great proportion of the islands in the Polynesian Archipelago and in the Indian Ocean; but that there must have been land within a certain distance from the surface, is very well ascertained, as it is now known that the coral polypes cannot build from a greater depth than twenty fathoms.

* Maunder's Treasury.

Dr. Carpenter gives the following interesting account of the formation of coral islands :—" A large proportion of the coral islands of the Polynesian Archipelago are shaped like a crescent, sometimes like a complete ring ; and these islands never rise many feet above the surface of the ocean. The highest part is always on the windward (easterly) side, against which the waves are almost constantly dashing. Within the crescent or ring, is a basin termed a lagoon, and this usually communicates with the open sea by a channel, sometimes of considerable width, on the leeward side of the island. Occasionally this channel is completely filled up by the growth of the coral ; and the lake, thus enclosed, only communicates with the sea by filtration through the coral rock. The coral polypes never build above low-water mark ; and they are not, therefore, immediately concerned in the elevation of the surface from beneath the waves. This is principally accomplished by the action of the sea itself. Large masses are often detached by the violence of the waves, from the lower part of the structure, and these are washed up on the windward side of the reef. Shells, coral-sand, and various other *débris*, accumulate upon it in like manner, until at last it is changed into an island, upon which there is a calcareous soil, capable of supporting various kinds of

vegetation. When these have once established themselves, the elevation of the surface continues with greater rapidity, successive layers of vegetable mould being deposited by the rapid and luxuriant vegetation of these tropical islands, which are soon tenanted by various forms of animals, and at some subsequent period afford a habitation to man."

The method of fishing for coral is as follows. A net composed of two rafters of wood tied crosswise, with lead fixed to them, and a quantity of loose netting and hemp, is let down where the coral reef is supposed to be, and when drawn up, the coral is found entangled in the loose netting; great care is required in pulling in the net, as the rope is apt to break. At Trapani, in Sicily, a very simple and ingenious contrivance is used for the same purpose. A heavy stone is fixed to a large wooden cross, to each limb of which are fastened pieces of strong net: this machine, being poised horizontally, is let down to the bottom of the sea, and made fast by a strong rope to the boat, which then rows about over the beds of coral; the large stone breaks the branches, and these becoming entangled in the net, are thus secured. Red coral is found in the Mediterranean, about Majorca and Minorca; on the south coast of Sicily, and on the African coast; also in the Red Sea, where reefs extend

throughout, often rising to the height of twenty feet above the surface of the sea.

As coral rock is very soft, most of the houses on the southwestern coast of Arabia are entirely built of it. The Red Sea has always been celebrated for this production, which accounts for its having been well known to Job, by whom it is ranked with the pearl and ruby, the onyx and sapphire. Some commentators doubt the correctness of the translation; but as the Hebrew interpreters and the oriental versions agree that coral is intended, and this substance must have been perfectly familiar to the writer, there is every probability that the common rendering is correct.

The following beautiful lines from Montgomery's 'Pelican Island' truly and elegantly describe the mighty fabrics of these tiny architects:—

"Compared with this amazing edifice,
Raised by the weakest creatures in existence,
What are the works of intellectual man,—
Towers, temples, palaces, and sepulchres;
Ideal images in sculptured forms;
Thoughts hewn in columns, or in domes expanded,
Fancies through every maze of beauty shown,
Pride, gratitude, affection, turned to marble,
In honour of the living or the dead?
What are they? fine-wrought miniatures of art,

Too exquisite to bear the weight of dew,
Which every morn lets fall in pearls upon them,
Till all their pomp sinks down in mouldering relics,
Yet in their ruin lovelier than their prime.
Dust in the balance, atoms in the gale,
Compared with these achievements in the deep,
Were all the monuments of olden time,
In days when there were giants on the earth.
Babel's stupendous folly, though it aim'd
To scale heaven's battlements, was but a toy,
The plaything of the world in infancy :—
The ramparts, towers, and the gates of Babylon,
Built for eternity, though where they stood,
Ruin itself stands still for lack of work,
And desolation keeps unbroken Sabbath.
Great Babylon, in its full moon of empire,
Even when its 'head of gold' was smitten off,
And from a monarch changed into a brute,
Great Babylon was like a wreath of sand
Left by one tide, and cancell'd by the next ;
Egypt's dread wonders, still defying time,
Where cities have been crumbled into sand,
Scatter'd by winds beyond the Libyan desert,
Or melted down into the mud of Nile
And cast into tillage o'er the corn-sown fields,
Where Memphis flourish'd and the Pharaohs reign'd.
Egypt's grey piles of hieroglyphic grandeur,
That have survived the language which they speak—
Preserving its dead emblems to the eye,
Yet hiding from the mind what these reveal ;—
Her pyramids would be mere pinnacles,

Her giant statues, wrought from rocks of granite,
But puny ornaments for such a pile
As this stupendous mound of catacombs,
Fill'd with dry mummies of the buidler worms."

With regard to the Dyes used by the ancients,—purple, blue, and scarlet are the only colours recorded in the Bible. Joseph's "coat of many colours" may have been composed of other hues; and "it would have been desirable to know whether the art of weaving a piece in various colours was at this time discovered or not. Judging from the information which the text affords, it would seem not; for the word which is constantly rendered 'colours,' may, as in the marginal reading, with more than equal propriety be rendered 'pieces,' which makes it probable that the agreeable effect resulting from a combination of colours, was obtained by patchwork in the first instance, and in after times by being wrought with a needle. The value and distinction attached to such variegated dresses, shows that they were not common, and were formed by some elaborate process. In the time of David, such a dress was a distinction for a king's daughter; for we see ladies anticipating the return

of a victorious general with 'a prey of divers colours, of divers colours of needlework on both sides*.' Mr. Roberts states, that in India it is still customary to invest a favourite child with "a coat of many colours," consisting of crimson, purple, and other colours, which are often tastefully sewn together. Dyeing was thus practised from the earliest times: entire pieces were dyed, as the robe of the ephod was blue, "ornamented with purple and scarlet," Exodus xxviii.; thread, for the embroiderer, as in Exodus xxxv.; and the skins of animals, "rams' skins dyed red," ch. xxv.

In all probability the Hebrews employed the same materials for dyeing as the Egyptians, whose country they had just quitted; but some of the colours found on the mummy-cloths were perhaps a later discovery than the period of the Exodus; and with these we have nothing to do, as they are not named in Scripture. The *blue* of Egypt, according to the best authorities, was formed by indigo, which valuable dye is obtained from the *Indigofera tinctoria*, a small shrub, native of India; and in the ancient paintings at Thebes, the blue is supposed to be oxide of copper, a mineral abounding in Egypt: green, yellow, fawn-colour, pale brick or red, brown, and black, with many varieties

* Pictorial Bible.

of these, are all either vegetable or mineral productions, and, though well known in Egypt at an early period, may at least not have been common before the Israelites quitted that country, which would account for their not being alluded to in the Sacred Writings.

Many of the Assyrian bas-reliefs are painted with various colours, particularly blue and red, which were, when discovered, as vivid as if just laid on, but faded on exposure to the air. Many bricks were found at Nimroud, painted with brilliant colours, and the ceilings were also gorgeously painted, or inlaid with ivory and precious woods. "The battles, sieges, triumphs, the exploits of the chase, and the ceremonies of religion were portrayed on the walls, sculptured in alabaster, or painted in gorgeous colours. These pictures were enclosed in coloured borders or friezes of elaborate and elegant design*."

Blue, as we have said, is probably of vegetable origin, for the simple plant-dyes would be used before the more artificial preparations from metals; but the *purple* and *scarlet* are supposed to have been animal productions, and as such must be more particularly considered. "The pre-eminence given at the present day to purple as a royal

* Layard's 'Nineveh.'

colour, is undoubtedly the result of the ancient preference which arose, when the relative superiority of purple to other colours was greater than at present. We have seen this colour frequently mentioned in connection with the works of the Tabernacle and the dress of the high priest; and among the heathen we know that the colour was considered peculiarly appropriate to the service of the gods. The Babylonians and other nations used to array their gods in robes of purple. It is said that when the beautiful purple of Tyre was first discovered, the sovereign to whom it was presented, appropriated it as a royal distinction. Homer intimates that it was only worn by princes; and this limitation of its use was common among other nations. A very early notice of this occurs in Scripture, where the kings of Midian, defeated by Gideon, are described as being clad in purple raiment, Judges viii. It is important to understand that the word *purple* in ancient writings does not denote one particular colour. Pliny mentions the difference between some of the purples: one was faint, approaching our scarlet; another was a very deep red, approaching to violet; and a third was of a colour compared to that of coagulated bullock's blood. The most esteemed Tyrian purple seems to have been of this last colour. This dye was obtained

from several varieties of shell-fish, comprehended under two species: one (*Buccinum*) found in cliffs and rocks; and the other (*Purpura* or *Pelagia*) which was the proper purple-fish taken by fishing in the sea. These shell-fish were found on the coasts of the Mediterranean and Atlantic, and locally differed in the tint and value of the dye which they furnished. The Atlantic shells afforded the darkest colour; those on the Italian and Sicilian coasts, a positive violet or purple; and those of the Phœnician shore itself, and in general the southern coasts of the Mediterranean, yielded scarlet colour. The dyeing matter must have been very expensive, as each fish only furnished a very minute quantity of juice, pressed from a white vein or vessel in the neck, and which could only be obtained while the animal was alive*.”

The *Purpura* has a thick, oval shell, either smooth or tuberculated; the spire is short. There are very many recent species, and some fossil.

The “scarlet” is considered by some writers to be merely a variety of the Tyrian purple, one of which nearly approached to a bright crimson or scarlet; but a dye of this kind was certainly known in ancient times, obtained from

* Pictorial Bible.

an insect somewhat resembling the American cochineal, but producing an inferior colour; this insect was called *kermes* by the Arabs, and *coccus* by the Greeks and Romans. "The female insect is about the size and shape of a pea, of a deep violet-colour, powdered with white, found chiefly on the leaves of a species of evergreen oak shrub, which is found in different parts of western Asia and the south of Europe. Now, that the colour afforded by this insect was the 'scarlet' of Moses, seems tolerably clear. The word rendered 'scarlet' in the text, and elsewhere in the books of Moses, is either simply *tola*, or *tola schani*. *Tola* means a worm, and according to the analogy in the use of the word *kermes*, would literally be rendered '*worm dye*;' the *schani* sometimes annexed, is variously interpreted to mean either double-dyed (as the best scarlets seem to have been), or, according to another derivation, bright, deep red dye. The terms together seem sufficiently to point out a species of *Coccus*, doubtless the *Coccus ilicis*, which is found in abundance on the evergreen oak (*Quercus coccifera*) in the south of France and many other countries. It is so understood by the Septuagint and Vulgate*."

Professor Tychsen, supposing the identity of the Scripture

* Pictorial Bible.

“scarlet” with the kermes established, properly concludes that the kermes dye was known before the times of Moses; that the dye was known to the Egyptians in the time of Moses, for the Israelites must have carried it along with them from Egypt; and that the Arabs received the name *kermes* with the dye, from Armenia and Persia, where it was indigenous, and had been long known.

The kermes has been long superseded by the American cochineal (*Coccus cacti*), which is far superior to any ancient dye. This very singular insect belongs to the order *Hemiptera*, and the various species are often called scale insects; they are of diminutive size, the males winged, the females without these appendages; the antennæ are long and filiform in the male, the legs short. When young they are tolerably active, “having much the appearance of tiny red tortoises, and feeding on the stems or leaves of plants, piercing them by means of a long and sharp rostrum, which goes to the very centre of the shoot, causing the sap to flow in abundance, by which means great injury is done, especially to the vines. In this state they continue growing in size for some time; but the period soon arrives when the sexes undergo a very singular difference in their transformation. All the insects now affix themselves to the surface of

the plants or stems; the little activity which they had previously possessed, entirely ceasing. The males discontinue to increase in size, and if one of them be opened carefully, a small and elegant chrysalis will be found in the old skin of the larva; the females, however, continue to increase in size, until they are many times larger than the other sex, the margins of the body being glued down to the plant, the body being by degrees distended by a very great number of eggs, until nothing more than the upper and under skins of the insects remain." The eggs are deposited in a layer of white, gummy matter, which prevents them from sticking to the bark, and are by degrees pushed beneath the body; the female then dies, and the young ones, when hatched, make their way from beneath this scaly covering.

As a proof of the ravages committed by these insects, it is said that the orange-trees in the island of Fayal, one of the Azores, were entirely destroyed by them; this injury extended also to St. Michael's; and the inhabitants of this group of islands, who depended almost solely on the produce of their orange groves, were reduced to great distress by the depredations of this apparently insignificant insect.

The Skins of Animals were used for various purposes by

the Hebrews, in common with other ancient nations. They were employed for writing on, before parchment was invented. Herodotus mentions the barbarians as writing or painting on the skins of goats and sheep; and Diodorus describes the ancient Persian records as being kept on the same substance; even in America, the Mexicans had books of skins, and the North American Indians had maps painted on skins. It was also certainly one of the most ancient, if not the most ancient form of portable writing; and they have great probability on their side, who contend that the books of Moses were written on the skins of sheep or goats. On the bas-reliefs of Nineveh are represented scribes writing down, *apparently on leather*, the number of heads of the slaughtered enemy, brought to them by Assyrian warriors. Thus were the heads of the seventy sons of Ahab brought in baskets to Jezreel, and laid "in two heaps at the entering in of the gate;" and such is still the mode of reckoning the loss of an enemy in the East. The Jews were most certainly acquainted with the art of preparing and dyeing skins, for "rams' skins dyed red" made a part of the covering of the Tabernacle.

In connection with this fact, the following particulars of a Hebrew manuscript roll of the Pentateuch, now in the

public library at Cambridge, are very instructive. The roll was discovered by Dr. Claudius Buchanan, in the record chest of the black Jews in Malabar, supposed to be descended from the first dispersion of the Hebrew nation, by Nebuchadnezzar. The date of the manuscript could not be ascertained, but the text is supposed to have been derived from those copies which their ancestors brought with them to India. It is written on a roll of goats' skins *died red*, and measures forty-eight feet in length by twenty-two inches in breadth. As it wants Leviticus and the greater part of Deuteronomy, it is calculated that its original length must have been not less than ninety English feet. In its present condition it consists of thirty-seven skins, comprehending one hundred and seventy columns four inches in breadth, and containing each from forty to fifty lines. Dr. Buchanan states, that the Cabul Jews, who travel into the interior of China, say that in some synagogues the law is still written on a roll of leather, made of goats' skins *died red*; not on vellum, but on a soft flexible leather.

Parchment is but an improvement, although a very important one, on the process just mentioned. It was one of the latest, if not the latest, of the various processes we have noticed, although some assign it a very early date, for want

of adverting to the difference between it and skins less artificially prepared. The improvement is said to have been invented at Pergamos, at a time when Ptolemy Philadelphus prohibited the exportation of papyrus from Egypt, with the view of obstructing the formation of a grand library, which Eumenes, king of Pergamos, was forming, and which he feared might eclipse his own great library at Alexandria. It is certain that the best parchment was made at Pergamos, and skins thus prepared were hence called *charta pergamena*, of which our 'parchment' is a corruption. In Greek they are sometimes called *membrana*, under which name St. Paul mentions them in 2 Timothy iv.

Parchment came to be used for legal, sacred, and other particular classes of works; but the comparative cheapness of papyrus, combined with as much durability as could be required for the more common literary works, maintained it still in general use. The Jews soon began to write their Scriptures on parchment, of which the rolls of the laws used in their synagogues are still composed.

Leather was also used in the manufacture of saddles, though at a later period; as in early times a piece of hide, leather, or cloth thrown across the back of the animal was the common substitute. The expression in Judges xix., "two

asses saddled," might apply to any kind of preparation for riding, and probably meant only the bridle and a cloth of some description.

Skins were evidently used by the Assyrians for various purposes; as, for instance, warriors are sculptured in the act of escaping from the enemy by supporting themselves on inflated skins, in the same mode which is practised to this day by the Arabs on the banks of the rivers in Assyria and Mesopotamia. The soles of sandals, and straps of different kinds also, are apparently of leather.

Leather was very early in use as a means of defence for the person during war; Diodorus says, that the first kings of Egypt clothed themselves during battle with the skins of lions and bulls; but the defence soon took the form of a shield; many are mentioned in Scripture, or at least four names are used to distinguish them, and though the frames were apparently composed of wood, the covering seems to have been hide thickly folded, and, if plated with metal, were often formed interiorly of skins. In 1 Kings x. and 2 Chronicles ix. shields are mentioned made of gold, but in all probability the metal was only employed on the exterior, the chief material being the bull's hide. Homer, in speaking of Hector, says—

“So saying, the hero went, and as he strode,
The *bull-skin* border of his bossy shield
Smote on his heels and on his neck behind.”

This must have been a very large shield, and probably answered to the *tzinnah* of the Hebrews, for the making of which, Solomon appropriated six hundred shekels of gold; whilst the *magen*, mentioned in Genesis xv., was only half the size; and the size, as well as the material, is again illustrated by a reference to Homer.

“The best and broadest bucklers of the host,
And brightest helmets put we on, and arm’d
With largest spears advance.
 Ye, then, who feel your hearts
Undaunted, but are arm’d with smaller shields,
Them give to those who fear, and in exchange,
Their stronger shields and broader take yourselves.”

And again:—

“With many a stroke
The bull-hide shields and lighter targes rang.”

The Hebrews, besides the two already named, used a variety of shields, which are mentioned in various parts of the Scripture, as the *soh'airah*, which, from the etymology, seems to have been of a circular form, and the *shelet*, which appears to have differed but slightly from the *magen*, as in

Solomon's Song they are used as synonymous terms: "Thy neck is like the tower of David, builded for an armoury, whereon there hang a thousand *bucklers*, all *shields* of mighty men." The first of these words is *magen*, the latter *shiltai*, the plural of *shelet*.

A few more extracts from Homer will tend to show more fully the ancient use of leather in the construction of these articles of defence:—

"Ajax approached him, bearing, like a tower,
His sevenfold brazen shield, by Tychius wrought
With art elaborate; like him was none
In shield-work, and whose home in Hyla stood.
He framed the various shields with seven *hides*
Of fatted beeves, all plated o'er with brass."

Again:—

"It struck the shield of Ajax; through the brass,
Its eighth integument, through *six of hide*
It flew, and spent its fury on the seventh."

There are also allusions in Scripture to anointing and rubbing the shield, which implies the use of skins, as they require this process to prevent cracking. In Isaiah is the following:—"Arise, ye princes, and anoint the shield;" and in 2 Samuel i., "The shield of the mighty is cast away, the shield of Saul not anointed with oil." The words added

to this verse, in our translation, refer the expression to Saul as an anointed king, "*as though he had not been anointed with oil,*" but might be intended to express the total destruction of a warrior whose shield was exposed to the rain and dew of the "mountains of Gilboa." The large shields were supported by a *leathern* thong passing across the breast :

"Every buckler's thong
Shall sweat on the toil'd bosom."

"Cooling the wound inflicted by the shaft
Of Pandarus; for it had long endured
The chafe, and sultry pressure of the belt,
That bore his ample shield."

Bow-strings were formed either of leather thongs, horse-hair, or the sinews of oxen; and the *bottles* used for holding liquids were also made of the skins of various animals. Those of kids and goats are still employed; the head being cut off, the body is extracted, and the neck serves as the mouth of the vessel: the skins of camels and oxen serve the same purpose, where a larger quantity of water is required. Bottles are likewise made of prepared leather, shaped like a powder-flask. The bottle carried by Hagar, when wandering in the wilderness of Beersheba, was probably a kid-skin. Wine was kept, as well as water, in this

kind of vessel, as is evident from various passages in the Old and New Testament; and this custom still continues in the East. Skin bottles were not peculiar to Asia, they were equally employed by the Greeks and Romans. Homer speaks of goat-skins,

"Tumid with the vine's
All-cheering juice."

There are many interesting illustrations of this custom in the paintings at Herculaneum and Pompeii: one represents a girl pouring wine from a kid-skin into a vase, and another shows a large skin of wine mounted on a cart, and being drawn off into amphoræ, or earthen vessels.

Keeping in mind the nature of the ancient bottles, the Biblical student will find no difficulty in comprehending the various allusions dispersed throughout the Scriptures; such as Job's expression, "It is ready to burst like new bottles;" that in the 119th Psalm, "For I am become like a bottle in the smoke," that is, shrivelled, dried up, as leather would be by a lengthened exposure to the influence of heat and smoke; in Joshua ix., "These bottles of wine which we filled were new; and behold they be rent;" and in Matthew ix., "Neither do men put new wine into old

bottles; else the bottles break, and the wine runneth out, and the bottles perish; but they put new wine into new bottles, and both are preserved:" the fermentation of the new wine would be too strong for old skins to resist, but by employing new skins, both wine and bottles would be preserved.

Though rather out of place here, the Lapwing of Leviticus xi. must be referred to, having been accidentally omitted in its proper order. It is supposed to be the Hoopoe, *Upupa epops*, Plate XIII., a bird often mentioned in the writings of antiquity, and remarkable for the beautiful crest, which forms so conspicuous an ornament to the head; the plumage is fawn-coloured, barred with black and white on the wings and lower part of the back; the tail is black, with a white crescent at the base. This pretty bird is about twelve inches long; it feeds on worms, snails, and insects. The prohibition of the hoopoe as an article of diet, in Leviticus xi., probably arose from the nature of its food. It is well known in Egypt.

There is so much of interest and instruction to be derived from the study of the Natural History of the Bible, as, indeed, from every department of Nature, inseparable as it is from the study and perception of the attributes of the great Creator of Nature, that it is hoped this unpretending little volume will prove useful to many who have hitherto read the Bible without comprehending a great portion of its contents, for want of some information on this subject. The young student of Nature will here see grouped, in a small compass, all those animals to which any reference is made by the sacred writers ; and though doubts exist as to the identity of some species, which may possibly be cleared up by future discoveries, and a mystery hangs over others which may never be swept away ; this does not lessen the value of the information already gained, or make it less incumbent upon us to study, with an earnest mind and a loving heart, those manifestations of the Deity which He has spread around us, from the earliest times, by His creative power.



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